# EDUCATIONAL REVIEW

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## I

## CLASSIFICATION AND INSTRUCTION IN RURAL SCHOOLS[1]

The Committee of Twelve has made a careful study of the defects of rural schools, with a view to suggest practical remedies.

It appeared to that Committee, first, that such schools need financial aid. There is on an average less money *per capita* in rural than in city districts. Besides this there are fewer pupils per teacher. With small school funds it is not possible to hire skillful and scholarly teachers, nor for full terms.

The remedy for this state of things is obvious, and it is practicable in rich States. The State must come to the aid of the rural district and insure it a sufficient fund to employ trained and experienced teachers. Many States have moved in this matter and many more are able to do so. But will the rural-school problem be solved when an increase of funds has procured good teachers, and for eight or ten months' annual session?

The committee had arrived at a more serious question. Can a rural school with a good teacher be a good school? It will find in its ten, twenty, or thirty pupils all grades of advancement, from the beginners at five years to those who have had seven or eight years of schooling, and attained the age of sixteen years or more. These pupils cannot be taught

[1] An address delivered before the National Educational Association, at Milwaukee, Wis., July 8, 1897.

in classes to any great extent; there must be many recitations and, consequently, short ones. Let there be good teachers, and they will certainly accomplish more than poor ones. But what can a good teacher do in a five-minute recitation? One of the accomplishments of a trained teacher is his ability to probe the pupil's understanding of the lesson and set him thinking about the relations of what he has just learned to what he has learned at a former time, either at school by study, or by experience in the events of his life. But even the skilled teacher cannot, in a five-minute recitation, probe the pupil's knowledge of the lesson and connect it with all its threads of relation. He cannot teach the pupil habits of deeper thinking. Moreover the pupil, if he recites by himself, or in a class of two or three, does not gain the great advantages that come from reciting in a class of twenty pupils substantially equal in ability. For each pupil in a class learns as much from his fellow-pupils as from the teacher direct. He can see the one-sidedness of the recitations of his fellows. They have learned some things that escaped his attention, but have neglected others that he has learned well. There is too great a disparity between the pupil's view of a subject and the teacher's view to make a thorough mutual understanding possible, except through the mediation of the class. Each pupil learns more from the teacher's criticism of the work of the others than from the criticism of his own work.

Every recitation reveals to the pupils of the class many points of view that they had missed in the preparation of their lessons; some have missed this point and some that point. They learn also to criticise the text-book and overcome their superstitious reverence for what they find printed in books.

We must admit that even the good teacher is handicapped in the rural school. He cannot use his best devices.

Almost without exception the work of the normal school goes to prepare the future teacher to handle classes. The class is the instrument presupposed in the school. It is the tool which must be used with skill. But the ungraded rural

school affords only five or ten minutes for recitations, and the class cannot be handled with skill in so short a time.

Fully possessed with an appreciation of the value of the class recitation, the earnest reformer of the rural school has proposed to classify or grade it like the city school. But his effort to escape from the evils of short recitations and individual instruction has only thrown him upon a worse evil. He has avoided Scylla by running upon Charybdis. He has brought pupils into classes, but they are of such diverse qualifications that they hinder instead of help one another, and they also balk the efforts of the teacher.

Thus we come from one evil to another in our attempts to remedy the defects of the rural school.

The bright boy or girl, if given a text-book and assigned regular tasks, will make much progress even in the country school, and without the help of the class recitation. The dull boy and the average boy will also do something. It is not the best, but it is worth while, even at its worst.

In attempting to remedy this state of things, however, an evil of greater magnitude is developed. Not only in the rural schools of some States, but in the villages of all the States, and also in the suburbs of cities, there are found schools in which pupils are classified in such a manner as to bring together pupils of widely different degrees of advancement—the best and poorest pupils in the same class being separated by an interval of a year or two, or even three years. In fact the classes of nearly one-half of our cities are separated by a year's interval, as in college, and, as a consequence, within each class there are wider differences of degrees in advancement —as wide, at least, as the interval between the classes, and sometimes wider; because the tendency is to separate the degrees of advancement more widely as the work goes on. It happens, therefore, that the chief care in the management of the work of instruction in a system of city schools is to grade or classify the pupils in such a manner that the interests of some are not sacrificed for those of others. The effect of placing pupils of different degrees of advance-

ment in the same class will be to urge unduly the backward ones, while the pupils in advance of the average in the class will have too little work assigned them. When bright scholars are kept back for dull ones they acquire loose, careless habits of study. When pupils of slower temperament are strained to keep pace with quick and bright pupils they become discouraged and demoralized. Even when pupils are well classified at the beginning of the year, differences begin to develop from the first day, and, after two or three months of good instruction, a large interval has developed between the advancement of the slow ones and that of the bright ones. Besides difference in temperament there is difference in regularity of attendance on account of sickness and family necessities; these things affect the rate of progress. Moreover, the degrees of maturity and amount of previous study develop differences. Classification in a school is never absolute. No two pupils are of exactly the same degree of progress. There are, probably, no two pupils alike in ability to do the daily work of the class. From this it is evident that there should be frequent reclassification. There should be promotions of a few of the best ones from below into the class above, and a few promotions from the best of that class to the next class beyond. After such promotion has been made through all or a portion of the classes of a school from the lowest, each class will find itself composed of fair, average, and poor scholars, together with a few of the best from the next lower class in place of the few that each has lost by promotion. New hope will come to those pupils who were before the poorest in the class, and there will be new stimulus given to the best pupils, who have been promoted to a higher class, for they will have to work earnestly to attain and hold a good rank in the new class. But the quick and bright ones thus promoted will gradually work their way toward the top of the class again. The slow ones in the class may be passed by successive platoons of bright ones introduced into the class from below, but they will pick up new courage on every occasion when they find themselves brought to the

top of the class by the process of transferring the bright ones who had begun to lead them into too fast a pace. This sifting-up process, as here described, corrects the disease known as "lock-step" in the graded schools. The sifting should take place as often as there develops a decided difference in degree of advancement between the best and poorest pupils of a class. In practice this is found to occur once in two or three months.

The rural schools, when small, do not find it possible to make classes to any great extent except in reading, writing, and spelling. In the larger rural schools, however, there is an attempt to introduce the city plan of classification, but, as a matter of course, the classes have to be very small. What is bad about these small classes is that the intervals from one class to another instead of being ten to twelve weeks, as in a good city school, are from one to two years. This works a great evil. It leads to careless teaching on the part of the teacher, who has to adapt his instruction to the average of the class; knowing, at the same time, that such instruction lacks interest to the best pupils because they are already familiar with the subjects, and knowing, secondly, that it is too difficult for the least advanced pupils for the reason that they lack the insight which a year's or a half year's more study has given to the pupils of average advancement. City schools, village schools, and rural schools that grade their pupils with intervals of a year or more between the classes are to be criticised chiefly for this fault. They are called "stiflers of talent" because they do not provide sufficient work for their ablest and brightest pupils, and keep them marking time with the less advanced pupils. Moreover, they discourage the slower pupils by requiring more work of them than they can accomplish.

This difficulty in regard to classification exists not only in public schools, but often in a more dangerous form in private schools. It is, perhaps, the greatest evil at present existing in the organization of the schools of the United States, rural and urban. In the first, second, and third years of primary work classification does not present serious diffi-

culty because of the greater number of beginners—say pupils of eight years and under. About sixty-nine per cent. of the pupils in the cities and villages of the country are in the first three years' work; thirteen per cent. are found in the fourth year's work; seven per cent. in the fifth year; four per cent. in the sixth year; three per cent. in the seventh year, and two per cent. in the eighth year. To form large classes and thereby produce economical instruction, the pupils beyond the fourth year must be brought together in central schools, and it is to this problem that the attention of the State boards of education is called by the Committee of Twelve.

This recommendation of the Committee will not seem important to those school directors who fail to understand the value of class recitation and of its dangers when forced on the pupils of small schools of different degrees of advancement. A rural school of 100 pupils would have, under average conditions, nearly 70 in the work of the lowest three years, and these would make five classes of 14 pupils each, with intervals of about half a year of advancement—not a very bad classification, if readjusted often by transfer of the pupils making most rapid progress into the class above. But there would be only 13 pupils in the next year's work, namely, the fourth. This would give two classes of 6 or 7 each. The fifth year would have 7 or 8 pupils, and the sixth, seventh, and eighth, years all together would have only 9 or 10 pupils. If 3 teachers took charge of this central school of 100 pupils, one could do better work with the 70 in the lowest three years' work than the one who took the highest three years' work with only 10 pupils.

The number of rural schools having few pupils may be estimated from the fact that, in Rhode Island, 64 schools out of a total of 263 have an attendance of fewer than 10 (1895). In Vermont there are 153 of these schools with less than 6 pupils each (1893). In New York 2983 are reported as having less than 10 (1895). Consolidation by transportation in suitable vehicles at the expense of the State is the most promising remedy, reducing the cost of instruction, and, at the same time, improving its quality. The increase

of villages and cities throughout all regions penetrated by the railroads makes possible this removal of pupils to central schools and the discontinuance of outlying districts in more and more towns every year.

But, inasmuch as the evils of classification with wide intervals between classes are not generally understood, it is likely that the concentration of pupils into village schools will not be so great a good as it might be. For it is quite a common belief that the formation of three or four groups or classes for the eight years' course of study is a good thing. Some go so far as to say that it is better than the close grading of the cities. "It is more flexible, more elastic, more adjustable to the pupil's needs."

These words "elastic" and "flexible" are used in a new and strange meaning here. The best city grading is "flexible" and "elastic" because the intervals between classes are small—only ten or fifteen weeks. It is easy to promote the brightest pupils over such a small interval when they begin to show a power to do a much larger amount of work than the majority of the class. They will find it possible to keep up with the average of a higher class. But suppose that the grading or "grouping" has two years' intervals between classes, as it would have if there were four groups in the elementary school—or say nearly three years, as it would have if there were only three classes or groups. Then it would be a much more serious thing to promote from one class to another, because of the amount of useful matter omitted. Instead of being elastic and flexible the four-group or the three-group system is rather to be called "brittle" and "inflexible"—a procrustean bed. All schools at work need constant readjustment of classification, and this can be made when the intervals between classes are at their minimum. Thirty classes between the first year and eighth year are possible in large schools in cities.

That all cities do not avail themselves of this possibility is one of the most serious defects in American school supervision.

It is very important, therefore, that the rural schools shall

not adopt this evil unnecessarily as they grow into village schools by growth of population and by transportation of pupils to central schools. Keep the classes small in central schools, and do not try to economize by saving in number of teachers until the schools become large enough to permit this without making large intervals between classes.

It is a terrible arraignment of the schools graded on the one-year, two-year, or three-year interval plan to accuse them of stifling talent in the bright pupils and of discouraging the dull pupils until they lose their self-respect.

The old ungraded school did not commit this error of destroying the habits of industry in bright pupils by yoking them with dull ones, or destroying the self-respect of the dull ones by constantly provoking comparison between them and their companions unequally yoked with them.

With increase of pupils there ought to come improvement in the instruction of the school invariably, and it will come if the evils of the graded-school system are understood as well as are its advantages.

WILLIAM T. HARRIS

COMMISSIONER OF EDUCATION,
WASHINGTON, D. C.

## II

## THE NEW HARVARD ENTRANCE REQUIREMENTS

During the last five years educational reform has gone forward with leaps and bounds. The Committee of Ten was formed at a time when the teachers of the country were in that favorable self-kneaded state where a little leaven leavens the whole lump. What were dreams in 1891 became hopes in 1892, possibilities in 1893, outlines in 1894, discussions in 1895, reports in 1896, and requirements in 1897. To deal with all phases of this astonishing development would be too much for the limits of a single article: let Boston illustrate the establishment of public kindergartens, Cleveland the workings of a model school organization, Brookline the enrichment of the grammar-school course, Minneapolis the provision of beautiful and healthful buildings, Cambridge the flexible system of promotion, Buffalo the combination of normal instruction with public-school teaching. Scores of cities, hundreds of institutions, thousands of men are taking part in this good work, and will have their reward in the raising of the standards of the American people.

This article is intended to give some account of the fruition, in one field only, of this broadcast seed-planting; to sketch the effort of one out of many colleges so to adapt its system of entrance requirements as to take advantage of what are believed to be improvements in subjects, methods, and spirit. Beginning with the summer of 1898, Harvard College, and her twin sister, the Lawrence Scientific School, instructed by the educational discussions of the past five years, will allow candidates to offer several new subjects, and old subjects prepared in improved methods.

To understand the extent and the significance of the

changes adopted in June, 1897, it is necessary to know something of the development of the entrance requirements of Harvard; and also of the workings of the system which has for ten years been in force.

Since the ancient days when to "construe Tully" was a chief obligation for the would-be Freshman, down to about 1871, the entrance requirements of Harvard, like those of other colleges, were Latin, Greek, and mathematics. There was also a little geography, and history came in as an adjunct to classics. The whole system was elementary and rather perfunctory, and was administered by oral examinations.

Among the services of that broom which has been sweeping clean for thirty years at Harvard University, was a pressure for serious written examinations, within the college, and for entrance. Aided by the same untiring influence in the "president's old armchair," from 1874 to 1876, English was added to the required entrance subjects. French and German were introduced, a choice of one out of three sciences established, sight translations required, and a substitution of mathematics and science for part of the classics.

In 1885 came another evidence of that discontent with its own achievements which marks the reforming spirit. Charles Francis Adams, in his Phi-Beta-Kappa address on "A College Fetich," blew a trumpet blast which was heard throughout the land: it was the protest of a man trained in the classic system against what he considered an undue exaltation of such classical learning as schoolboys may acquire; at the same time it was a plea for greater flexibility in the requirements; for more attention to the mother tongue, and for some recognition of the sciences which were opening up in the schools.

Though public attention was concentrated on the controversy over Greek, the Faculty understood that the most important question was that of making a list of options and deciding how many of them should be allowed. After ardent discussion, lasting many months, a result was reached

in 1887 by the adoption of a new and elaborate system, which is still in force: arithmetic and geography were dropped out of the list; the sciences were recognized; new subjects were added; and a substitute for Greek was allowed. By common consent the new system was to have at least six years of trial before any fundamental alteration. In fact, the changes since 1887 have been few: English has been improved, and has a higher relative weight; some definitions have been altered; some subjects which were on trial—as botany—have been dropped. During the last few years, however, motions looking toward important changes have been usually laid aside, till the whole subject could be reached.

The present system is based on a division of the twenty-two allowed subjects into two groups, as follows; the numbers appended in parentheses show the relative number of points assigned to each subject in making up the entrance record:

ELEMENTARY (SEVEN REQUIRED).

1. English (2).
2. Greek (2), *or*
3. Latin (2).
4. German (1), *or*
5. French (1).
6. History (1) (Ancient, *or* English and American).
7. Algebra (1).
8. Plane Geometry (1).
9. Astronomy and Physics (1), *or*
10. Experimental Physics (1).

ADVANCED SUBJECTS (OPTIONS).

11. Greek (2).
12. Latin (2).
13. Greek Composition (1).
14. Latin Composition (1).
15. German (2).
16. French (2).
17. Logarithms and Trigonometry (1).
18. Solid Geometry (1).
19. Analytic Geometry (1).
20. Advanced Algebra (1).
21. Physics.
22. Chemistry.

In the elementary subjects, there are alternatives in classics, modern languages, science, and history; the minimum is seven studies, counting 9 points; the maximum nine studies, counting 12 points. The number of subjects to be chosen out of the advanced group varies according to the

alternatives used in the first group, and here comes in the substitute for Greek. The boy who omits both an ancient and a modern language must take 10 points out of the advanced group—a total of 19; if he omits only an ancient language he must choose 8, a total of 18; if he omits only a modern language he must choose 6, a total of 17; if he takes all the elementary subjects (either one of the alternatives in history and physics) he gets off with 4 advanced points, a total of 10. Greek may therefore be omitted, but must be replaced by additional advanced subjects; and, furthermore, there is an interlocking provision that, in case of such omission, the boy must take 4 points in advanced mathematics or science and mathematics; advanced modern languages will not be accepted in place of Greek.

Complicated as the scheme seems—and it is currently believed that no one but the Dean of Harvard College knows all its ramifications and possibilities—it has, in practice, proved convenient, efficient, and intelligible. Custom has wiped out some of the alternatives. Nobody ever claims the privilege of omitting Latin; and the substitute for Greek is either very much harder or very much more repellent than the Greek; so that nineteen candidates out of twenty simply accept the Greek, and more than half take the simplest combination, viz.: all the elementary, and 4 advanced points.

Underlying the whole scheme, however, are certain very definite and clear-cut principles which may be enumerated *seriatim*, for they affect the plans of 1897.

1. In the elementary group six fields of learning must be studied: English, classics, modern languages, mathematics, history, and science; in the advanced group four of these fields appear. This means that the Faculty insists on a broad foundation for the college studies.

2. The mother tongue has a prominent place as a fundamental for educated men.

3. The advanced subjects are all built on subjects in the elementary list, and the system therefore encourages thorough and far-reaching study of some branches.

4. All the advanced subjects are also taught in Harvard College, so that they take the place of a part of the Freshman work, and prepare at once for more advanced courses. Any subjects offered beyond the required number (a very frequent practice) may therefore count toward the degree.

5. Of the four scientific subjects all but one are experimental, thus encouraging observational training.

6. In history there is a much-used alternative, which recognizes the practice of many schools which substitute modern for ancient history.

As time went on various weaknesses and difficulties have been felt in this system. Some subjects, as analytical geometry, are practically never offered; the so-called "Book Physics" (astronomy and physics), is habitually crammed; the examiners in history could not compel thorough teaching. But the principal difficulties were three: First,—and largest in the public mind,—was a widespread discontent with the substitute for Greek, from the belief that it called for much more intellectual exertion than the language itself. In the second place the Lawrence Scientific School developed, made its entrance conditions stiffer, and used the regular entrance examinations; hence it became necessary to add some technical subjects, not in the College list. In the third place, the schools began to respond to the stimulus of the general educational movement, and could not always get the advantage of superior teaching, because inferior work would also meet some of the requirements.

A new era of discussion came. The four programmes of the Committee of Ten, in 1893, included subjects of which neither the College nor the Scientific School took notice. Educational associations urged changes and redefinitions; and, in 1896, Harvard was one of the six colleges invited to take part in the fertile New York Conferences. The opinion of sister colleges, and of preparatory schools, was then concentrated and condensed. The septennate of trial of the Harvard system of 1887 had expired; the time had come to reopen the whole question of entrance requirements. It is

fortunate that advantage could be taken of the discussions and suggestions which resounded through the country.

In January, 1895, a committee was raised by the Faculty of Arts and Sciences, which controls both Harvard College and the Lawrence Scientific School, with a mandate to consider the whole subject of entrance requirements, and to report. This committee has eleven members, one from each department within whose province an entrance subject lies. During 1895-96 it held many laborious sessions, and was ready to present the first of its series of reports in October, 1896. The Faculty set apart for the discussion all its regular meetings throughout the year, holding extra meetings for current business. In June, 1897, it had so far progressed as to adopt and publish a set of definitions of subjects henceforth to be allowed for entrance to the College and Scientific School.[1]

The definitions thus published are official, and there seems to be no probability of any serious change. Great pains have been taken to make them so clear that ambiguities will not be found, and so comprehensive that they may not need additions. Each of the thirty-three definitions springs from the appropriate department, and is the resultant of long deliberation in department meetings. In nearly every subject the opinion of teachers in secondary schools has been taken, either by set conferences with cross-examination and debate, or by correspondence, or by discussion in educational associations, or by all these methods together. The New York conferences have been especially valued, and several of the Harvard requirements are essentially adaptations of their reports.

After going through the mill of the department, each definition has been given over to the mercies of the hard-working Committee on Entrance Requirements, which has made verbal changes, pointed out ambiguities, secured uniformity, asked questions of the representatives of the department in the committee, and often requested

[1] Copies may be had by writing to the Publication Agent, University Hall, Cambridge, Mass.

reconsideration. After the committee was satisfied, the definitions have all been subjected to the searching and often severe criticism of the Faculty. Since each definition had a department behind it, and in many cases was backed up by the prestige of a conference, the Faculty has in no case reversed any final report, though it has, in several cases, asked for reconsideration. Such revisal has been called for whenever it appeared that secondary teachers had not been consulted.

No one will claim for the results of these discussions that they are perfectly clear, or consistent, or reasonable; but it has been worth while to describe the process by which the definitions have been framed, in order to make clear the conditions of the movement.

In describing and explaining the new system two cautions are necessary. The work of the Faculty is still unfinished, for the choices and combinations to be allowed out of the list are not yet decided, and the debate may last for months. The only definite announcement affecting choice of subjects applies only to such studies as are common to both the old list and the new—it is as follows:

"In the examinations of 1898, and thereafter until the new definitions shall be exclusively in force, alternative papers will be offered under the new definitions (where they differ materially from the present definitions) in Greek, Latin, German, French, History, Mathematics, Physics, and Chemistry."

And no one has any authority to speak for the Faculty, either to explain its motives or to predict its future action.

The writer has no more knowledge of the reasons for the changes made than any other member of the committee; and his judgment as to changes likely to be made is doubtless affected by his preferences. In this article he is alone responsible for any errors of fact or inference.

The first question is of the number and selection of subjects. Perhaps this may best be explained by a simple tabulation: the figures prefixed are the numbers given to the suc-

cessive subjects in the official pamphlet, and the asterisks mark points which require special explanation.

| IN THE OLD LIST ONLY. | COMMON TO BOTH LISTS. | IN THE NEW LIST ONLY. |
|---|---|---|
| | 1. English. | |
| | 2. Elementary Greek. | |
| | 3. Advanced Greek. | |
| | 4. Greek Composition. | |
| | 5. Elementary Latin. | |
| | 6. Advanced Latin. | |
| | 7. Latin Composition. | |
| | 8. Elementary German. | |
| | 9. Advanced German. | |
| | 10. Elementary French. | |
| | 11. Advanced French. | |
| | 12. Elementary History. | 13. Advanced History. |
| | 14. Elementary Algebra. | |
| | 17. Advanced Algebra. | |
| Solid Geometry.* | 15a. Plane Geometry.* | 15. Geometry.* |
| Analytic Geometry.* | 16. Logarithms and Trigonometry. | |
| Astronomy and Physics.* | 18. Experimental Physics. | 24. Astronomy. |
| | 22. Advanced Physics. | |
| | 19. Chemistry.* | 20. Physiography. |
| | | 23. Meteorology. |
| | | 21. Anatomy, Physiology, and Hygiene. |
| | | 25. Botany. |
| | | 26. Zoölogy. |
| | | 27. Wood-working. |
| | | 28. Blacksmithing. |
| | | 29. Chipping, Filing, and Fitting. |
| | | 30. Machine-tool Work. |
| | | 31. Freehand Drawing. |
| | | 32. Projections. |

The first column of the above table shows how few of the old requirements disappear altogether: out of the whole series of twenty-two only two are dropped and one is altered.

At present there is an alternative to experimental physics, in the so-called "book physics" and astronomy. This purely text-book requirement is much disliked by the scientific men, and is to be withdrawn. On the other hand, the requirement in experimental physics is rearranged and the number of experiments reduced. At the desire of the mathematical department analytical geometry is also withdrawn, as a subject not taught in secondary schools.

Geometry has had special treatment. In the present list solid geometry is allowed as a separate advanced subject. In view of its close relation with plane geometry, and of the feasibility of elementary geometrical work in the grammar schools, it has been thought best to make a new subject which shall include plane geometry and part of solid. Since this is a clear addition to the former minimum, the Faculty retains the old plane geometry as an alternative; it is agreed that, a few years hence, the new "geometry" requirement will be the only one allowed.

Chemistry has at present an anomalous place, since it is included in the list of advanced subjects, though not in "advance" of any other study in the list. Henceforth it will be subject to any limitations placed on other elementary optional subjects.

The second column of the table includes the nineteen old subjects which are to be continued. There are some slight changes of title, such as, "Greek Authors" instead of "Advanced Greek"; but the significant changes are in the statements of definitions, which will be discussed below.

In the third column appear the most serious and far-reaching changes—the addition of fourteen new subjects. Of these six (Nos. 27-32) are new technical requirements, intended only for the Scientific School; another is geometry, which has been explained above; one is advanced history; and six are new sciences. Thus the list of available sciences is more than doubled; and place is given to all that are included in the programmes of the Committee of Ten—that is, which are taught or likely to be taught in high schools.

Of these, physiography is perhaps the most important, for it is taught, in some fashion, in most graded schools, is gaining in public interest, and is capable of wide use, in a genuinely scientific method. Doubtless it will be a slow process to get it into secondary schools, but it is likely to gain in estimation. Meteorology is to be an advanced subject, based on elementary physics. Astronomy is to be an observational science, based on elementary geometry. Anatomy, physiology, and hygiene has given much trouble to the Harvard faculty, because it is widely taught, but in very inferior methods. It will be allowed only with experimental work as an adjunct. Like botany and zoölogy this subject is not yet completely defined; all three refer to pamphlets not yet published, but all will require laboratory methods.

Advanced history is, in many respects, the most novel of the new subjects: it is the only addition among the "humanities" to the list of subjects which may be carried on for three or four successive years. A well-jointed course in history is already given in many schools; but, at present, no college will give them credit for the whole of their good work. The advanced history also includes, besides the familiar Greek, Roman, English, and American history, opportunities in European history, and also in "detailed study" (in other educational documents, more accurately called "intensive study"). To apply proper tests to all the combinations now made possible in history will be a hard task; if successful, a great step will have been taken in developing the study of this important subject.

From this brief review of the number and character of the subjects to be allowed, it will be seen that the total rises from twenty-two to thirty-three, besides the six alternatives in history; that large additions are made in sciences and technical subjects; and that, in the advanced group, will be found new supplements to old elementary subjects. No subject has been withdrawn which the schools value; and teachers may judge for themselves how far the new list will be favorable to schools which have already established good courses in modern languages, science, and history.

So much for the length of the list; it is now time to think of its breadth and thickness. How far do the new definitions in old subjects alter the amount and character of the work required in each study? The difference may be illustrated by quoting the old and new statements in two subjects:

ELEMENTARY LATIN.

*Old Definition.*—The translation at sight of simple prose (with questions on the usual forms and ordinary constructions of the language).

The passages set for translation must be rendered into simple and idiomatic English. Teachers are requested to insist on the use of good English as an essential part of the candidate's training in translation.

The following pronunciation is recommended: *ā* as in *father*, *ă* the same sound but shorter; *ē* like *ê* in *fête*, *ĕ* as in *set*; *ī* as in *machine*, *ĭ* as in *sit*; *ō* as in *hole*, *ŏ* as in *nor*; *ū* as in *rude*, *ŭ* as in *put*; *j* like *y* in *year*, *c* and *g* like Greek κ γ.

It is further recommended that pupils be accustomed, from the beginning of the preparatory course, to translate into this language, both orally and in writing, passages prepared by the teacher on the basis of the prose authors read.

*New Definition.*—The examination will be adapted to the proficiency of those who have studied Latin in a systematic course of five lessons a week, extending through at least *three* school years. The two parts of the examination cannot be taken separately:

(*a*) The translation at sight of simple Latin prose and verse. (The passages set for translation must be rendered into simple and idiomatic English.)

(*b*) A thorough examination on a prescribed portion of Cicero's speeches (about thirty pages), directed to testing the candidate's mastery of the ordinary forms, constructions, and idioms of the language; the test to consist, in part, of writing simple Latin prose, involving the use of such words, constructions, and idioms only as occur in the speeches prescribed.

For three years, beginning with 1898, the portion of Cicero prescribed will be the second, third, and fourth speeches against Catiline.

The estimate of the periods of study necessary to prepare for the examinations in Latin is made with reference to schools which have a four years' course. Schools which have a five years' course may more advantageously provide for beginning the study of Latin in the first year, with some diminution, if necessary, of the time devoted to it in the last years of the course.

The course of reading pursued in preparation for the examinations in Latin should include:

(*a*) Easy reading, included in or following a suitable introductory book (Latin Lessons) amounting to from 30 to 40 pages.

(*b*) Nepos (Lives) and Cæsar (Gallic War), 90 to 120 pages.

(*c*) Cicero, 90 to 120 pages, including the four speeches against Catiline and the speech on the Manilian Law, with additional speeches selected by the teacher.

(*d*) Virgil and Ovid, 6000 to 10,000 verses, including the first six books of the Æneid.

Preparation for the elementary examination alone should include (*a*) and (*b*), the four speeches against Catiline, and from 2000 to 3000 verses of Virgil, or of Ovid and Virgil.

The pupil should be constantly guided in proper methods of reading, and trained to read the Latin intelligently, as Latin, before undertaking to render it into idiomatic English. There should be constant practice in reading aloud, with due expression, and in hearing the language read. In connection with the reading, to insure thoroughness and accuracy in the pupil's understanding of the language, the study of grammar, with some practice in writing Latin, should be maintained throughout the course. There should also be frequent written translations into idiomatic English.

To prepare for the examination in Latin Composition, pupils should be trained, from an early stage of the preparatory course, to render into Latin not merely detached sentences, illustrative of constructions, but also passages of connected narrative or description, prepared by the teacher on the basis of the prose authors read.

ADVANCED FRENCH.

*Old Definition.*—The translation at sight of standard French prose.—Grammar.—Composition based upon the following books: Daudet (La Dernière Classe—Le Siège de Berlin).—Mérimée (Colomba).—Sandeau (Mlle. de la Seiglière, the play).—Corneille, Racine, Molière (one play by each author).

Translation at sight will form an important part of the examination. Candidates will be expected to be familiar with the subject-matter as well as the language of the prescribed books. Some of the books may be changed from time to time, but with not less than two years' notice. The passages set for translation will be suited to the proficiency of those who have begun to study the language in college and have had instruction in it three hours a week for two years.

*New Definition.*—The translation at sight of standard French. (The passages set for translation must be rendered into simple and idiomatic English.)

(*b*) The translation into French of a connected passage of English prose, to test the candidate's familiarity with grammar. Proficiency in grammar may also be tested by direct questions.

The passages set for translation into English will be suited to the proficiency of candidates who have read, in addition to the amount specified under Elementary French, not less than six hundred pages of prose and verse from the writings of at least four standard authors. A considerable part of the amount read should be carefully translated into idiomatic English.

Candidates will be expected to show a thorough knowledge of accidence and familiarity with the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

It is recommended that the candidate be trained to follow a recitation conducted in French and to answer in that language questions asked by the instructor.

In these two examples may be seen most of the general principles which underlie the whole scheme.

1. They are intended to be clear and self-explanatory; hence they are more explicit and comprehensive than the old series. By stating a minimum number of recitation hours, or of pages of text-books, they aim to give an answer to the question—How much work must one do to fulfill the requirement in this or that subject?

2. To the improvement of the quality of work the changes are chiefly directed. Hence, throughout, the definitions deal with individual thinking methods; they urge sight-reading, parallel reading, study of language forms, conversation in a foreign language; original solutions in mathematics; library methods in history; laboratories, accurate observations, and notebooks in science. These are not new ideas: nor is this the first college faculty to give its approval to methods of education which train in individual thinking. The importance of the revision lies in its putting into practical working form for the service of schools, pupils, and teachers, reforms which have for years been getting headway. Doubtless methods will continue to improve, and future conferences and committees will again suggest improvements in entrance requirements; but the Harvard Faculty has honestly tried to take advantage of the best it now knows about study and teaching.

3. In all the list English is the only subject not redefined. The reason is that it is the only subject which had previously been systematically worked through, and brought down to date; and a large body of colleges are in agreement on the subject as now defined. But at the head of the whole list appears the following significant statement:

> *Good English.*—Clear and idiomatic English is expected in all examination-papers and notebooks written by candidates for admission. Teachers are requested to insist on good English, not only in translations, but in every exercise in which the pupil has occasion to write or to speak English.

It is true that the Committee reported an elaborate requirement in advanced English, which the faculty refused to

accept. No one can safely say what was the motive of this rejection; but many persons were much affected by a clause in the definition which would have made it an additional subject required of every candidate.

4. In all the languages there is included a distinct grammar requirement. On this subject there has been much difference of opinion in the Faculty, inasmuch as it seems an abandonment of the old "reading knowledge" requirement. But every language department insisted on an opportunity to test the candidate's understanding of the make-up of a sentence, as well as of its "general sense."

5. Written work is urged in many of the definitions, especially in history: stress is laid on notebooks, themes, topical work, maps, drawing, and other combinations of observation and expression. The new definitions, therefore, tend to increase the training in English through the medium of other subjects.

6. The departments have carefully excised all reference to particular text-books or editions, hardly mentioning even specific authors in modern languages.

7. Realizing that, to many good teachers, the new methods thus insisted upon are at first hard to apprehend, most of the departments propose to prepare pamphlets in which will be set forth in detail how the requirements may best be met. Some of them will make lists of reference books and parallel readings. In the sciences will be stated lists of experiments, and suggestions about apparatus. Everywhere the effort will be made to join forces with the teachers in working out their joint problem of preparing boys and girls for college.

Having thus analyzed the little pamphlet of sixteen pages in which the definitions are printed, one is tempted to ask why there need be so many changes. Are not the colleges prosperous now? Are not teachers sufficiently harassed by the variety of the requirements of the different colleges? Need any university add to the confusion?

The answer is, of course, that the Harvard requirements are an attempt to find the precipitate of this chaos; that it is

not an isolated work, but a part of a general movement. Columbia, Pennsylvania, Cornell, Wellesley, Tufts have already adopted parts of the New York Conference reports. In her recent action Harvard is ranging herself alongside her neighbors. Many of the subjects in the Harvard lists were not discussed in any of those six conferences; but, so far as they apply, liberal use has been made of their reports; and in some cases,—as, for instance, history,—they are adopted *in toto*, except a few changes of phraseology. One of the arguments most often heard in the Harvard discussions has been the value of harmony with other colleges, and the need of yielding some points so as to meet other people halfway. In framing the definitions the intention has been to make them suggestive to other institutions also.

A criticism which may perhaps be brought against the new requirements is that they call for more work from schools already overburdened. The clearest addition is in geometry; in history the old "paper requirements" have been made effective, so that the passing point is undoubtedly raised; and in most of the definitions a higher quality of work is suggested. Much of the increase may be provided for by better relation of the parts in the school curricula; in many schools the present preparation is of the quality henceforth expected from all. But Harvard distinctly commits itself by the statement that "In framing the new terms of admission of Harvard College the Faculty does not intend to increase the total amount of work required in preparation." This can have only one meaning: viz., that, in view of the higher quality of work which will be required, the quantity may safely be somewhat reduced, by accepting a smaller minimum number of subjects.

A more assailable point is that the new definitions call for good teaching, by competent persons, in every study. Where are trained teachers of physiography, or botany, or physiology, or history to be found? Under the old system teachers who had had only a high-school education somehow got along and prepared boys for college in some branches. Of course no school is expected to offer all the

thirty-three subjects; so that the schoolmaster will always have choice among them. But surely the schools will see that the colleges, by such requirements as these, are at last making in all subjects that distinction between good and bad teaching which, heretofore, they have made chiefly in classics and mathematics. Good teachers, who have taken pains to prepare themselves in specialties, will be glad of the opportunity to do what cannot be done by crude and ignorant men and women. Light is breaking for those who have, heretofore, failed to find a preference by school boards for persons who knew something serious about the subjects which they professed to teach. The Harvard requirements recognize the dignity and the capacity of secondary schools.

So far as Harvard College itself is concerned, the advantages of the new system are obvious. Under it, young men and women are more likely to come to college with habits of thinking for themselves, of observing for themselves, of weighing evidence, of making decisions. In the second place, the greater variety of subjects establishes a new relation with the English high schools of the country, by accepting nearly any piece of work which appears in good school programmes, as so far forth a part of college preparation. The pathway from school to college is widened, though each step may be a little higher. In the third place, a good understanding with the schools means more college students. But if one may generalize on the frame of mind of ninety people who are rarely unanimous, the Harvard Faculty is in this whole matter not much influenced by a desire to swell its particular catalogue; its strongest motive is a purpose to be in the front rank of the fighting cohort of educational reformers, side by side with other colleges and school men; to have a part in developing education in all grades, in schools which will never send candidates to Harvard; to help on the rational individual teaching of the children of America.

So far we have been dealing with decisions actually made and published by the Faculty. In conclusion, a few words

may be said about the great difficulties which must be overcome before the rest of the task is completed.

The first serious question is that of ratings. The old index numbers (shown on page 219 above) are artificial, and do not correspond to either time allotments in schools or intellectual difficulty. A new set of ratios is necessary, and is promised by the Faculty. But elementary Greek, for which two years' study is sufficient, is now rated as equal to elementary Latin, for which three years are necessary: if the rating of Greek be reduced, the sum of the points necessary for a substitute for Greek will also come down. In like manner, at present, elementary German requires from a year to two years, and counts one point; advanced German takes a year, and counts two points. These anomalies must be, at least, debated.

Not only has Greek at present the advantage of a high rating, it has also the protection of the "interlocking system"; for the present assumption is that a boy who has not an Achæan mind must have a mathematical and scientific mind. No provision is made for a boy who does not profit by Greek but obstinately does well in modern languages and history. There is some evidence that the Faculty is disposed to unshackle the feet of the Greekless, and let him run like anybody else; but it can be done only over the heroic bodies of the defenders of classical learning. For, in the Harvard Faculty, there are "friends of Greek," and hostiles; just as, in other circles, there are "friends of silver" and "gold bugs."

With the wider list the question of what shall be absolutely required of all candidates becomes more serious. If the Faculty carries out its supposed intention of reducing the total number of points, shall the reduction fall on the required or on the optional group? If the former, what subject shall give way? Physics is a possible burnt-offering, or, rather, the question may perhaps be solved by opening up a group of elementary sciences, one of which must be chosen. This would also replace the vanishing alternative of "book physics," and continue the present possibility of omitting ex-

perimental physics—a subject which requires an expensive laboratory.

No voice has as yet been raised in the faculty in favor of admission by certificate; in history, physics, and other scientific subjects, notebooks are required, but the teacher certifies only that the work is the student's own; not that it is sufficient.

For the Lawrence Scientific School, where the Greek question plays no part, the Faculty has already fixed a combination of subjects with large options; and has announced that the entrance requirements in that school will gradually be increased till they reach about the same level as the College requirements.

Although most of the unsettled questions have already had much discussion, no one can predict when the faculty will finally settle the ratios, and announce the allowable combinations; but this end may be expected during the coming academic year, 1897-98. When the result is made public, and the promised departmental pamphlets appear, the three years' labor will be finished.

Then will come many years of other labors, both in schools and college. Teachers must prepare themselves, libraries and laboratories must be furnished, traditions must be established among the pupils. On the other hand, the loins of the College must be girded up for the new task of providing and administering proper tests in more than thirty different subjects, many of them as yet untried.

Whatever the merits of the new requirements, they have in advance the approval of many distinguished secondary school-teachers, and they embody principles which the Faculty holds dear, and to which it will adhere for years to come. Hence the system looks permanent. Still, if there should arrive any general agreement on entrance requirements, Harvard is likely to look with favor on such modifications in her own definitions as will keep her close to uniform requirements—provided thorough developing work is insisted upon. For the colleges all have the same interest, and that

is in the boys and girls who wish to go to college, that they may be well prepared.

When it comes to combinations and minima, Harvard will probably not be so disposed to yield her practices; for she seems to encourage choice out of a long list as the very threshold of her elective system. The true principle of unity on this subject is already shadowed forth: uniform definitions for each subject; uniform insistence on good methods; a uniform list of studies allowed to be suitable for secondary schools. Then each institution should be free to decide what units shall be accepted, in what combinations and on what relative terms. That is the *E Pluribus Unum* of college entrance requirements.

ALBERT BUSHNELL HART

HARVARD UNIVERSITY,
CAMBRIDGE, MASS.

## III

## THE SCOPE OF THE SCIENCE OF EDUCATION

The study of education stands just now in a somewhat singular position both in England and America. There are still a few men to be met with, most of them teachers of Latin and Greek in the universities, who treat the pursuit with contempt. Oxford and Cambridge afford some examples of these views, but I have met them as far west as Chicago. They are, however, the advocates of a lost cause: they oppose the study of education to-day in the same temper that led them to oppose natural science and university extension yesterday.

The majority of influential teachers regard the pursuit from a different standpoint, although they are far from feeling any great enthusiasm about it. It is admitted, as an abstract proposition, that he who proposes to teach should study the art of teaching; that a professional career can scarcely be recognized as such unless the members of the profession have passed through a period of probation and of professional equipment. The great movement in England for the public organization of secondary education has given, indeed, a force to this argument which was scarcely anticipated a few years ago; it is now admitted, by all who seek to systematize the administration of English secondary schools, that the teachers of the future must be required to study education before the state can recognize them.

There is the eternal antagonism between the scholar and the worker; the practical teacher, calling in the aid of science, meets with the same rebuff that the practical engineer has encountered in former days. And there is the contempt of the college man (or " university man," as we call him) for the normal teacher; pedagogy, it is said, may be well enough for the uncultured teachers of uncultured children; but scholars

who teach the children of the élite need not stoop to such aid.

These hindrances and reproaches are to be expected; time, and time only, will remove them. There is one source of opposition, however, which touches more nearly the interests of those who, like the present writer, endeavor to teach education. Our friendly critics, who are willing to encourage the training of teachers in the abstract, profess themselves unable to see the practical value of it. They challenge us to show, from our pedagogical literature or from the experience of successful teachers, where exactly the benefit to the teacher will arise, if he spends his time in psychology and theory. The analogy, they say, with the task of the engineer or the physician is suggestive, but it will not satisfy us unless you can show that your study of theory is productive of results similar to those offered by medicine and mechanics. We may rely that the demand is severe, since the material of our art is not metal and stone, or even the human body, but life and character, which scarcely lend themselves so readily to the exhibition of "results." Nevertheless, the demand has to be met, and it will scarcely satisfy the criticism of public opinion if we take a lofty attitude and claim that our work is too grand to be "known by its fruits."

We may meet it, I venture to urge, in two ways. First, we may copy the example of the great leaders of educational reform—Pestalozzi, Herbart, Arnold, Froebel—in their supreme devotion to children. These men were not mere lecturers or professors of education, discussing the deeds of other teachers, building sepulchers for those whom an earlier generation stoned, but they were workers, applying theory to practice every hour of the day and training other workers to do the same. Hence they produced results, which even the scoffers, who treat the theory of education with contempt, will not venture to ignore. How does it come to pass that we practical people, English and American, have been so largely "theoretical" in this matter of training teachers? With some few remarkable exceptions, one finds the great part of the work of training conducted in studies

and lecture rooms, wholly apart from children. It is supposed, in many quarters, that a teacher is " trained," and that the professor has done his duty by his students, when a number of hours have been spent in hearing lectures on speculative psychology and on the history of education. Such a method was allowable in the days of Melancthon, who dealt with every branch of knowledge from his lecture notes, but, since his day, the laws of scientific method have been applied to every scholarly pursuit, and if they are neglected in the study of education, scientific men will continue to ignore our claims.

It is the example of Germany—so helpful in many directions, so hurtful in others—that has led us astray. In most German universities we find a professor (very often a teacher of philosophy or theology) discoursing learnedly *Ueber Pädagogik*, and we have imitated his example, forgetting, in our admiration of his *Wissenschaft*, that the besetting sin of the Germans is their worship of thought to the neglect of action and reality. We, who are not weighted with this unhappy belief that knowledge is power, ought surely to take our own course, and follow the more ancient creed which warns us that faith without works is dead.

Secondly, we may seek to convince skeptics of the value of our work by aiming at a more scholarly, a more scientific exposition of education. I am aware that, in urging this point, I am imposing a responsibility upon myself; and I may be interpreted as uttering a reproach against other teachers of education. But I am sure that they are as anxious as myself both to share the responsibility, and to remove the reproach, if it exists; for it is certain that the promotion of any novel branch of study in our seats of learning, depends largely upon the possibility of its being expounded in a style suited to the high standard which should prevail among scholars.

Now the study of education is yet in its infancy among us; although a large stock of ephemeral pedagogical literature is produced year by year, the books of abiding value, worth being set in comparison with important works in other

professions, are rarely forthcoming. In England one obvious reason may be alleged: very few scholars have hitherto made a serious study of education, and the most eminent of these, such as Bain and Sully, have had little practical experience. I venture to hold that we have yet to take the first step in laying the foundations of our science. Twenty years ago Bain wrote his *Education as a science*,[1] in which he laid down the lines on which, in his opinion, the scheme of educational inquiry should be conducted. His work has, on the whole, been accepted as our guide in England, and, I take it, in America as well; largely owing to the fact that Bain was eminent as a psychologist. But in later days the influence of Froebel and of Herbart has been felt—by you in America even more than by us in England; and, along with their influence, we have felt the power of new social ideals which have widened the whole range of thought upon the business of education. The old bottles of Bain and Donaldson and Payne cannot hold the new wine which is fermenting in our modern communities. Hence the foundations of our science must be rebuilt.

The task is a huge one: many are contributing to it. I propose in this paper to offer a fragment to the structure, by giving an outline of the topics which seem to me to be embraced in the science of education, arranging them in a logical order. The plan is the outcome of my lecture work during the last two years. The reader familiar with Herbartian literature will see that Herbart and Rein have served as a model, but in several important directions I have felt bound to deviate from the Herbartian precedents.

Section 1. The definition of education.[2]—In order to exhibit the sequence of topics in the subsequent sections, I must offer here the form of statement which serves me at present by way of definition: "The adult portion of society, organized in the forms of various corporations[3] (families,

[1] Compare his pamphlet, written at the same time: *Is there a science of education:* a presidential lecture to the Education Society. (London, 1879.)

[2] Article in London *Journal of Education* (September, 1896) on the "Definition of Education."

[3] See Seeley's *Introduction to political science*, ch. i.

churches, states, etc.) seeks to promote the welfare of the rising generation.[4] This it seeks to do by the employment of certain specific influences, in addition to the inevitable influences of circumstance and environment which operate upon all human life. These specific influences are called education, and those who exercise them are called teachers."

This statement requires explanation in several particulars, but it will serve my present purpose as an indication of the source for the three chief divisions, as I conceive them to be, of the science of education. These spring from three questions: In what does the welfare of the rising generation consist? The answer to this question is an account of the end of education. Again, How does the adult community set about its task so as to achieve this end? Here we have problems classed under the title, the administration of education. Finally, How does the teacher proceed upon his business when those who administer education have set him to his task? Here we deal with the conduct or practice or business of education. In passing, let it be noted that the term "teacher" is not to be confined to the professional teacher; a parent or a clergyman often engages in the work of education, as described in the definition given above.

It will be observed that this starting point for an exposition contrasts with the early scheme of Bain and others in more than one respect. It refuses to regard education as an application of psychology, but places it on its own feet as an independent social science, which will turn now to psychology, now to ethics, now to politics, just as it may need their aid. Again, it gives a recognized place to the problems of administration; which, with us in England, are at this moment the pressing problems of the day. When our theories of education took their rise these problems were of little moment; to-day they cannot be ignored, and our exposition must pay proper regard to them.

Section 2. The end of education.—In this section the

[4] The term "child," or "children," is hereafter used as a technical term of the science to indicate a non-adult, subject to education: possibly "pupil" will eventually prove to be the better expression.

controversy between the different schools of exposition becomes acute. You have, on the one hand, the views of Bain, who expressly excludes ethics because it is hopeless to find agreement among moralists; whereas all the teachers, from Comenius to Froebel, agree in subsuming the aims of the teacher under the more general aims of enlightened human beings. Then, again, you have the champion of the new education, who protests, in the name of the helpless child, against an interpretation of the end which shall lay burdens upon him fit only for the shoulders of the adult. A way out of these perplexities must be sought; it is found, in my view, by watching the work and life of teacher and child together. The warring schools of religion and morals are silenced when the actual business of education, in its possibilities and its limitations, are considered. In this section I therefore discuss: (1) the ethical basis of education; the standpoint from which the teacher's ideal is to be regarded;[5] the highest possible that he can reach; (2) the limitations of the teacher's aim: due partly to the nature of the child (a psychological inquiry); partly to the teacher's limited function as a servant of the adult community (a politico-social inquiry). It will be observed that this treatment excludes much that is often discussed in connection with the end of education; for example, it does not touch questions of modern studies, of manual training, and the like. These, indeed, have a close relation to the end of education, but they find their place at a much later stage in the final section.

It is clear that the order of topics here proposed for our exposition is not a matter of indifference: first, end, then, administration, then conduct. For we cannot rightly determine our attitude on the matters just mentioned unless we have previously resolved what the general end of education is to be. Are you to teach carpentry to boys? Certainly, if the aim of education is to have regard to boy-nature; but if your aim is that of the Renaissance scholar and is limited to the acquirement of knowledge, the bench and its tool will find no place. So with the relation of the

[5] See essay on "Definition of education," *supra*.

administration to the end of education. The problems with us at the moment in England center round the relations of the state to secondary education. How can these relations be contemplated at all unless you have first a clear conception of the ideals which you hope to achieve by putting the educational machinery into force? The popular ideal of ten years ago, which is still with us, was limited to the hope of successful trade rivalry with Germany and the outcome, in administration, has been the Technical Instruction Act, which has worked much good for England, but has undeniably done something to lower the moral ideals of English teachers.

Section 3. The administration of education.—Here I must be content to give the headings of the chapters under which I have grouped the large variety of topics to be embraced:

Chapter I. The nature and methods of study.—A similar introduction is needed as a preliminary to the first section: treating of the nature of scientific method as applied to the study of the science.[6]

Chapter II. The corporations that claim a voice in the administration of education.—The inquiry here is a purely political one, and as such must be associated with history; the method of investigation must also be comparative, for every country admits the claim of these various corporations in varying degrees.

Chapter III. The establishment and classification of the institutions of education.—Among these the school for general education is most common, but equally important is the older form of the home, with parent or tutor as teacher; and special forms of every type, including reformatories, asylums, and the like.

Chapter IV. The office of the teacher and the provision of teachers.—Including their classification, remuneration, qualifications, and professional organization. It is also necessary to include their relation to the authorities (Chapter

[6] Compare Sheldon Amos's introductory chapter, in the *Science of law* and the *Science of politics* (International Scientific Series).

IX) which appoint them, but this cannot be adequately treated until the constitution of these authorities has been discussed.

Chapter V. The provisions of the material of education.—(1) Funds, the sources of revenue for education (fees, endowments and subscriptions, rates and taxes), the modes of expenditure; (2) Land and buildings; (3) Plant and apparatus.

Chapter VI. Principles of control.—A. Control of pupils (including the relation of the school authorities to parents). Here we have the difficult problem of the leaving certificate.[1]

Chapter VII. Principles of control.—B. Control of teachers.—The oversight and inspection of schools by the authorities that direct and control them.

Chapter VIII. Advisory and statistical functions.—In which the United States have set a model to all the world by establishing the Bureau of Education at Washington, and at the same time have given a warning to all the world, by rendering it impossible for the Commissioner to secure reliable returns from the States, unless they choose to respond to his appeals.

Chapter IX. The administrative authorities to fulfill these functions.—It might be feasible to take this chapter as a sequel to Chapter II, but I have found it more logical to run through all the functions and then to consider the authorities that have to fulfill the same.

There are in all countries four grades of authorities: (1) The central authority or authorities of the state; (2) the local authority or authorities; (3) the committee or governing body of each educational institution; (4) the principal (or *Lehrer-Kollegium*) of each institution—regarded, of course, for our present purpose, solely as an officer of administration.

Now, in the case of each of these authorities, we must seek for principles relating to

(*a*) The constitution of the authority: in some cases, more than one element is involved; thus the center for legislation

[1] Compare the German *Reifezeugnisse* and *Einjährigexamen, Abiturientexamen;* fo the elaborate certificate system of the University of the State of New York.

in England is Parliament. And while the Minister and his Department form the central executive authority for elementary education, the Charity Commission is another authority of a central kind, for secondary education.

(*b*) The functions of each authority—distributing the duties described in Chapters III to VIII each into its proper compartment.

(*c*) The areas of control for the local authorities and the mutual relation of each authority to the rest.

I repeat that the business of the science, here as everywhere else, is to seek for principles, correlating for this purpose the varying experiences of the countries and the administrators who have paid most attention to the problems concerned. We have come a long way from psychology; we are here in a department which belongs equally to educational and to political science, and needs an acquaintance with both if it is to be adequately treated. I by no means offer the titles of these chapters as a final scheme, even for my own work; but, as I believe that the attempt to expound the subject in this formal fashion is novel, I think it best to give the scheme in the rough, as some indication of the ground to be covered. My own interest in the study was first awakened by Professor Rein's lectures at Jena,[8] and then stimulated by the work of the Royal Commission. It gives me especial pleasure to write on this subject to American readers, because it was in America, when engaged on the business of the commission, that I first felt the necessity of systematizing my own thoughts upon this entire field.

We only now approach those topics which usually monopolize attention in expositions of the theory of education.

Section 4. The conduct of education.—Here the administrator is excluded; the teacher, within the limits prescribed to him by his conception of the end, and by the authorities who appoint him to his task, is now charged to educate the child.

The distribution of topics may be illustrated by a table as follows:

[8] See Van Liew's translation of Rein's *Outlines of pedagogics*.

| | | THE CHILD | THE SOCIETY |
|---|---|---|---|
| A. Psychological basis | B. | The unit: the individual child | C. The child in the corporate life of a school (or family)[9] |
| D. Physiological basis | E. | The care of the body, or physical education | F. School hygiene |
| Immediate Influences | G. | Government of the child[10] | H. Organization of government in the school society |
| | I. | Guidance of the child[11] | J. Organization of the guidance in the school |
| Mediate Influence | K. | Teaching | L. Organization of the school and of the class for teaching |

The theory of teaching demands separate consideration. Before entering upon the two divisions of material and method usually accepted, there is a preliminary inquiry to be faced. We are to employ certain selected means (the branches of teaching) by which we propose to aid the child to achieve the end of education. What, then, are these means of teaching? They are the various branches of science and art, and their nature is supposed to be sufficiently understood because teachers have themselves, as children or adults, pursued the same. But this is a dangerous supposition. The futility of much of our discussion on curriculums must be traced to this very cause: that we evade the fundamental problems involved in an investigation of this kind. It is proposed, for example, to include history in the curriculum; the proposal meets with popular favor, and history—national, ancient, or modern—takes its place among the other branches. As soon, however, as you begin to arrange a scheme of instruction, you find that scarcely two teachers are agreed as to an interpretation of the term history. This inquiry is really a department of philosophy, for it involves a survey of the intellectual and artistic pursuits of human beings, defining the distinctive qualities of each and arranging them upon a system. Thus:

[9] In an Analytical Index that I have compiled to an edition of Thomas Arnold's *Educational Writings* (Pitt Press, Cambridge, England, 1897), I have indicated the importance of a special consideration of the psychology of the school society.

[10] *Regierung.* [11] *Zucht.*

Division I. A survey of the sciences and arts which may be pursued by children.—In making this survey, I find it necessary to emphasize the distinction already indicated in the use of the terms "science" and "art." We have two contrasted types of teaching—branches which mainly aim at imparting knowledge (by instruction, *Unterricht*), and those which mainly aim at imparting skill (by an occupation, *Beschäftigung* [12]). The latter comprise all the arts of expression in language and music, of representation in form and color, and of production. This distinction is ignored by the Herbartians, but I have been led to regard it as a grave defect in the Herbartian system, that in this matter it abides still under the influence of the Renaissance, and looks almost wholly to instruction as its means toward the ethical end of education, ignoring the principles of Froebel on the one hand, and, on the other hand, those industrial and democratic forces which have created manual training.

Division II. The selection of the material.

Chapter I. The sequence of the various branches, according to the needs of the growing child.

Chapter II. The correlation or concentration of these branches.

Chapter III. Special method (*Spezielle Didaktik*). The types of curriculum, as determined by the national needs. This inquiry is dependent, of course, on our earlier investigation of administration.

Division III. Method.

Chapter I. The general principles, or formal stages, which govern the acquirements of knowledge, following very closely the five steps of the Rein and Ziller school.

Chapter II. Principles which govern the acquirement of skill in an art. If I am right in Division I, in making a cardinal distinction between branches of knowledge and branches of skill, we are pursued by the same distinction in our search for method. You cannot teach carpentry or reading on a scheme which is based upon processes of apperception and abstraction.

[12] Froebel's term is also to be found in Herbart.

Chapter III. Special method (*Spezielle Didaktik*). This might be extended over many chapters, for every main department of science and art demands a modification of the principles of general method.

This sketch is, I fear, scrappy; but it is intended to be nothing more than suggestive. I desire to indicate, not so much to specialists in pedagogy, as to teachers and administrators who are interested in training colleges, how large is the field of investigation which the study of education opens up. He who would survey the whole of it must be a psychologist and a physiologist, and at the same time he must understand the problems of local and national politics. His acquaintance with the various branches of science and art must be thorough enough to enable him to philosophize upon their nature and their functions. And, in order to make his knowledge fruitful, he must have gained a practical experience of the life and ways of the child and of the school society.

Let teachers, in contemplating the demands of the mistress whom they serve, be under no illusion. The study of education is not the easiest, but the most arduous, pursuit in which a professional man can engage. Those who plead that the reward she offers is scanty may quit her service, and may have their reward in fields where a harvest is to be reaped on easier terms.

J. J. FINDLAY

THE COLLEGE OF PRECEPTORS,
BLOOMSBURY SQUARE,
LONDON, ENGLAND

## IV

## PRESENT-DAY PROBLEMS IN THE EDUCATION OF WOMEN

The collegiate training of women has an assured place in the educational activities of the present age, in spite of the reluctance with which in some quarters it has been accepted. This movement, whose aim is systematic intellectual training of a high order, presents problems which are of vital interest not only to educators but to all students of social progress.

The intellectual education of women has always been closely related on the one hand to their general status in society, and on the other to the condition of intellectual acquirement among men. In most countries the position of women has not, until recent times, been such as to demand any training of their intellectual powers. Their education has been extremely limited, and this is equally true whether the term education is used in its broadest sense or in the erroneously restricted sense of merely mental training. It has been the part of women in the past to be unlettered, and they have been content to be so. But even as this statement is made, the mind travels swiftly through past centuries and recalls the names of many women famed for intellectual achievement, each one reflecting a glory upon her age. We gladly give them our praise, for within their very souls was that sense of power which not only led them to rise superior to the conditions of sex which hemmed them in, but made them master the still graver difficulties which met all searchers after knowledge, men as well as women. We think of scores of men pre-eminent for scholarship in the Middle Ages, but we seldom realize the depths of ignorance which prevailed for centuries, not only among the so-called masses, but also among the classes favored for their time in

opportunities for acquirement. Not only the women but the men also were unlettered, and they too were content to be so. Learning belonged to the seclusion of the monk's cell and cloister, not to the world of adventure and conquest which lured men of action and power.

But with the birth of the New World came the revival of learning in the true sense. The founding of the Boston Latin School in 1632 and of Harvard College in 1636 were acts which led inevitably to the Revolution of 1776 and the establishment of the Republic, for they represented the belief of the early settlers that the true liberty they sought must rest on a basis of sound education. The steps taken by the colonists to establish the higher learning slowly but steadily developed into the movement for free popular education, as experience and time showed that this was the necessary outgrowth of the principle of a democracy. Universities, colleges, and academies were supplemented by free public schools, and the foundations were laid for the public educational system which now, in some parts of our country, extends from the kindergarten through the university. The progress in this land has been but a forerunner of that in other nations. The form of government here has undoubtedly been the cause of bringing education so much sooner within the reach of the masses. It is now recognized by the more enlightened nations that the maintenance of free popular education is a function of the state.

This brief representation of the trend of general education in this country also indirectly outlines the movement for the education of women. It has advanced as the status of women in society has advanced, it has grown as the idea of the importance of education for all citizens has grown, and it has become more general as the opportunities for education have become more general. In the last century many girls received intellectual training of a high order, but it was given to them privately and without system or recognition. Public approval of the education of girls was at first given very grudgingly. It appears that in 1790 girls were first admitted to the public grammar schools of Boston for a part

of the school year; but it was not until 1828 that they were allowed to attend school the whole year. In 1830, as a matter of convenience solely, three public schoolhouses were reserved for the use of girls.

The progress of the movement when once begun was steady and sure. The women who had given their minds, their hearts, and their lives to the upbuilding of the nation, were surely entitled to its best fruits. Mary Lyon founded Mount Holyoke Seminary; Emma Willard organized Troy Female Seminary; in 1883 Oberlin College was open to all students without distinction of sex; in 1865 Vassar College arose as a beacon light of progress; then came the opening of the State universities with their rich stores, and now the great institutions on private foundations are offering their treasures of the higher learning to women as to men. With the march of the century the position of women in society, in industry, and in government has steadily altered, and at the same time they have shared in the widening scope of general education and profited by the highest opportunities for learning and scholarship which the world affords.

Such are some of the facts which history shows concerning this movement. There is another fact which must be noted before it is possible to understand the problems of to-day. As intellectual training has gradually come within the reach of a larger number of men, and has been extended to women, the methods of training which to each age seemed wisest and best for men have been sought and followed by women. Long before any college or university was open to women, college professors gave private instructions to girls, teaching them just as they taught the boys in the classroom. Since the time when formal recognition was first given to women in institutions of learning, in colleges and schools alike, attempts to differentiate the sexes in matter and mode of teaching have not prospered. Efforts in that direction have, on the contrary, tended to bring undeserved ridicule on the whole movement in behalf of women. It is now generally admitted, except by the newspaper humorist, that there is no such thing as *feminine* logic or discernment, or

accuracy of power of observation or of analysis, any more than there is sex in language or mathematics or science. If education is considered as a matter of intellectual training, the means proved best for one sex are equally good for the other.

If, then, it is granted that women are to share with men the best that the world affords in the realm of mental training, we are brought to a consideration of the problems which confront the movement to-day. These problems are not what they were a generation ago. When collegiate education for women began to make notable progress and to attract the attention of thoughtful observers, the cry was that women were incapable of strenuous mental effort; that they were not fitted by nature to receive the same intellectual training as men; that their mental powers were feeble and limited. In spite of predictions of failure, women made the venture and succeeded. Experience proved that theory was at fault. The minds of women were shown to be worthy of the new opportunities for their development. Surrender on the part of objectors was complete at this point.

The contest was next waged in another battlefield. It was vehemently and persistently asserted that the physical powers of women would prove unequal to the strain, even if their mental powers were sufficient. For years the arguments pro and con were bandied, with the evidence constantly growing from experience that systematic mental occupation tended rather to improve than to destroy the physical health of women. The final answer came through the efforts of the Association of Collegiate Alumnæ, whose statistics and data, collated by the Massachusetts Bureau of Statistics of Labor, practically settled forever this long-mooted point and gave all women reason to be thankful that one more form of opposition had been removed from their path.

It would be a serious error if the adherents of this movement should be content with the steps which have been gained and overlook the difficulties which now confront them. The problems which face all who are interested in

the education of women were never more serious, never more perplexing, never more worthy of careful study and incessant effort than they are to-day. The first of these problems which demands attention is the proper correlation of the physical powers with the mental. We are still seriously handicapped by the notion, which prevailed widely not more than a generation ago, that physical vigor is incompatible with mental strength or intellectual achievement. The scholar was supposed to be characterized inevitably by drooping shoulders, pale countenance, and all the marks of physical deterioration. Fortunately we are outgrowing that conception. A good many people are now convinced that "a sound mind in a sound body" is not a mere oratorical phrase generally impossible of realization in actual life, and they are being greatly helped in demonstrating their belief by the increasing favor shown to physical vigor independent of mental activity. It is now no longer the fashion, as it once was, for a girl, any more than a boy, to be feeble physically. The popular sports which have taken such a hold on the American people of late years are playing a great part in giving us, as a nation, the strength which we need in coping with our duties and responsibilities. This favorable attitude of the public mind will do much to lessen the difficulty by solving this special problem. The investigation of the condition of physical education among girls in colleges and universities, made by the Association of Collegiate Alumnæ thirteen years ago, showed how nearly hopeless was the state of affairs. Much of the strength of the Association was straightway put into efforts to promote an interest in physical education among girls and women, and the outcome is most encouraging. There is reason to be glad that so much has been done; yet how much remains to be done! Well-appointed gymnasiums and expert teachers in physical culture are not enough, though their value cannot be overestimated. We need more definite instruction in the laws of health, we need more attention to the quality of food supplied to students and to the sanitary condition of their homes; we need a better understanding of the physical dis-

aster which follows a wanton misuse of the hours of sleep or of social diversion, and we need most of all a still stronger conscience in our college communities, whose voice shall be raised in constant condemnation of the student who violates the welfare of her physical nature.

Certainly of no less importance is the problem of the correlation of the moral and spiritual natures with the intellectual. This is a burning question, and one which needs courage as well as wisdom. It would seem as if there never could have been a time when the demand was greater than it is now for the true interpretation of the principles of right and honor. The nation should be able to look confidently to its educated youth as leaders in this time of need; yet they fail all too frequently. It is true that they know the principles; but they lack the courage to voice them. Every college student knows in her own college experience how hard it is to stand for the right, when popular sentiment among her associates is tending the other way. Is it not possible to contrive a course for the development of a morai backbone which shall be worthy of the brain power it has to carry? Should not there be more open recognition of the truth all feel that the ethical nature of youth deserves and demands training?

Almost the same thing is to be said of the spiritual nature. It is claimed now and again that colleges are hotbeds of atheism. The accusation is false. The condition which is thus characterized is the same spirit of unrest and of dissatisfaction with old forms which prevails in society at large. Underneath it is a deep yearning for an expression of all that man holds most sacred. There are many signs that this is true. The eagerness with which people are reading books which deal with the vital truths of the higher life, or are listening to great preachers of God's word, shows this. Far from being the enemies of spiritual uplifting, student bodies in reality are quick to respond to real leadership in the higher life. How this immense power for good can be best developed is the problem.

Experience and investigation have demonstrated very

clearly another problem in college training for women. Over and over again the four years of college work have utterly failed in effective results because of the lack of an adequate basis of early training. Any consideration, therefore, of the college movement must take into account the home and school training of childhood. The two periods are closely dependent—they are, in fact, one and the same, and any attempt to dissociate them is doomed to failure. The modern movements in primary and secondary education are destined to bear fruit, and their ultimate value will depend largely on the readiness of university educators to profit by them. On the other hand, the spirit of the university must be felt through all the lower grades of schools. What serves one serves the other, and constant watchfulness and power of adaptation is necessary for both. The study of the development of little children by trained observers will do much toward unifying the whole system of education. There is certainly abundant opportunity for non-professional, as well as professional, educators to devise ways and means of securing for the years of childhood the conditions on which progress in later years will depend. A study of the principles involved and the methods to be chosen has been well begun, but a much wider interest in the problem is greatly needed.

A problem which comes more strictly within the narrower limits of our theme is the choice of subjects which properly belong to the collegiate years. Everybody knows how great a field for controversy this presents. There are a few general points which should be considered. In the first place, our heritage of university courses has come from the Church. The subject-matter of the university curriculum has been largely determined by the needs of the priesthood. The present generation has seen an immense revolution whose results are full of promise, but whose tendencies also present points of danger. The radical revolt of modern times against mediæval scholasticism has done a noble work, but there is a possibility that in our enthusiastic devotion to the results of modern research and scholarship we may hold in

too light esteem the treasures of ancient thought and experience.

In the second place, education is not merely intellectual training, though that may perhaps be its first function. It should also seek to widen the range of knowledge. As Professor Earl Barnes nobly says: "The curriculum of any grade of school to-day aims to bring before the student through types an epitome of all that man has thought and felt, and a vision of all that God has built into his infinite universe." But here too lurks a danger. The spirit of our age and land is such that the utilitarian aspect of education has an immense hold on popular opinion, and there is a constant effort to place acquisition before training. Superficial knowledge which can immediately be made use of in bread-winning is too generally prized. Moreover there is the demand for specialization, and it is made to begin more and more early. The truth is overlooked that the specialist needs a broad, general education of the higher sort; otherwise he will fail in much of his power as a specialist through his inability to relate his own piece of work to the rest of the universe, even if he is able to grasp it in more than a limited and sectional way. On all sides we feel the pressure of an age of haste, an age of utilitarianism. The problem of the college is to maintain through the repose of true scholarship the ideals of genuine learning. The importance of uniting training and acquisition is sometimes overlooked by educators whose range of vision is limited. Impressed by the practical value of certain subjects, they fail to see that no scientific method of presenting them has yet been fully evolved, and that thereby they are not fully entitled to a place in an educational scheme. It is true, however, that some of these subjects—*e. g.*, modern languages and English literature—are making rapid strides forward, and within a very short time have gained greatly in educational value as subject-matter for instruction. But there is yet much to be done before all the subjects which are urged as worthy a place in a college curriculum can be thus fully recognized by true educators.

Closely allied with this theme of the curriculum in general is the question of choice of subjects by women for their best development as women. It is not as easy to lay down the law for all on this point as some would assert. Any attempt to do this rests on the assumption, in the first place, that emphasis must be given to acquisition rather than to training; and, in the second place, that all women have need of the same kind of information. In reply it must be said that the work which women are now more and more called on to do in the world demands, first of all, the best intellectual discipline. For instance, there are few forms of activity among men which require more carefully trained powers than housekeeping,—an occupation which is supposed to be women's peculiar sphere. Soundness of judgment, keenness of perception, quickness of decision, promptness of execution, all the higher powers are needed at their best to meet the manifold responsibilities and emergencies which arise. Failure to recognize this fact and the assumption that housekeeping comes by nature to women undoubtedly lie at the root of the disasters which are but too common in household administration, and which would be still more frequent were it not for the quick wit and ready adaptability which generally characterize women. It is manifestly true that in general, when men undertake such cares, they meet with a larger measure of success than women do. The administration of household affairs on a large scale, as in clubs, hotels, or public institutions, is almost entirely carried on in this country by men. The explanation undoubtedly is that the ordinary training and experience of the boy are much more likely to fit him to estimate properly the relation of one fact to another. Girls are not usually brought in such contact with the affairs of the world as to learn how to see things in their right proportions, and consequently, unless they are given special training, are harassed and discouraged by non-essentials.

Again, if it is granted that union of training and of acquisition is practicable, the fact must be acknowledged that the kind of acquisition to be chosen is a matter for the indi-

vidual rather than for the sex. This is recognized in the case of men. The facts studied by a lawyer are totally different from those studied by a physician. The difference between lawyer and physician is far greater than that between physician and housekeeper. The woman in charge of a family would have more need of the kind of information a physician uses than a lawyer would have. It is evident that there are many phases of this problem, that it should be soberly and wisely studied, and that women—and educated women—should be most competent to study it.

Another problem which faces the advocates of collegiate education for women is how best to bring the college training in touch with the world and its work. The old idea has not yet been given up that the life of a scholar is something apart from the common interests of mankind. The charge is made that the college woman often considers that her special training sets her quite apart from the rest of the world. If this is true, as may be the case sometimes, the result is farcical, for the one conception that a woman should certainly gain from collegiate study is that these few years of effort can after all merely open her mental vision to the vast stores which are yet beyond her reach, and train her to use them as time and opportunity come hand in hand. Her friends and acquaintances may sometimes be to blame. It frequently happens that a girl feels herself placed in an entirely false position by the adulation of her immediate circle of friends. She longs to be taken simply, as her brother is, and freed from the artificial expectations which surround her. Moreover, she feels more helpless as to her real place and value in the world than she would if the college had done its whole duty. Here again there are on the one hand tradition and conventionality, on the other the newly awakened soul ready and eager for its task; the question is how the chasm shall be bridged.

Finally, the best results cannot be obtained from collegiate training until an atmosphere of greater freedom prevails. Lucy Larcom once said that genuine liberty was essential for a poet. Women can never be great lyric

singers as long as they have any sense of oppression or restraint. This is true also of the best intellectual expression, and is undoubtedly the reason why so little creative work of a high order has been done by women. Fortunately many of the conventional aspects of the woman's college are disappearing, and greater freedom in social life is everywhere accorded to women. How to maintain the restraint essential to a period of development and at the same time the spirit of independence, sincerity, and frankness,—in other words, the sacredness of individuality,—is the problem.

It may be claimed that the questions suggested are not peculiar to the education of women. Many of them belong as well to the education of men. This must be true in so far as the individual is regarded as a human being rather than as a member of one sex or the other. It must be granted that the collegiate education of women is now an integral part of the whole system of education. The young of the race are all to be trained as citizens whose ideals of honor, of right, of justice, of truth, shall be the same whether they are men or women. Certain fundamental principles which are common to both sexes must be established. Moreover, whatever a woman's specific work in life is to be, she should be given in the college the scientific training on which she can build her professional learning. This foundation is the same whether she is to be a physician, housewife, philanthropist, or mother.

True progress in education can be made only by constant study and vigilant effort. Every thoughtful and interested student should be ready to contribute from experience and investigation to the solution of the problems which to-day confront the education of women and which to-morrow will give place to others. Every college woman especially has a great responsibility, as well as opportunity, in standing as the sympathetic critic and loyal supporter of the men and institutions whose efforts in behalf of women are one of the wonders in a century of wonders.

MARION TALBOT

UNIVERSITY OF CHICAGO

## V

## THE SPIRIT OF THE PRACTICE SCHOOL[1]

All conscious progress is toward a clearly defined goal, which appears to the individual or to a people as an ideal worthy of all effort. Where this ideal is wanting, or where it threatens to disappear, there can be no hope of a forward movement. Our national life furnishes ample proof of this fact. After the wars for independence at the beginning of the present century, the idea of German unity appeared in sharp outlines in the minds of the people. The clearer the idea became, the more the nation collected her energies for its realization. As a result of this concentration the ideal became the actual and effort was at an end.

Where there is life there can be no rest, so the realization of this ideal was but a temporary pleasure and a new one was conceived, at first indistinctly, then in ever clearer, sharper outlines, until at present the energies of the people are stirred to their depths. The realization of this new ideal is being accomplished in the warmest of conflicts and will be the theme of the coming century.

The labor problems in the past decades lay in the political field, in the coming decades they will be found in the ethical field. As the German hitherto has prayed "Thy kingdom come," he now bends his energies to make the kingdom on earth correspond to the kingdom of heaven.

Since the great gulf between the worldly order of things and the ethical has been discovered, efforts have arisen to bridge it and to inspire the present social order with ethical ideals. Is not that people most fortunate which places before itself such aims, and which, even though through sharp struggles and convulsions, turns its energies to such an ideal

[1] From a lecture by Dr. Rein before his students. Translated by John W. Hall, Franklin School, Buffalo, New York.

task! And is not very smaller company—yes, every individual—fortunate when in pursuit of such an aim! Let each see to it that he be not distanced in the race! To assist in the moral regeneration of society is also the task of our small seminary, over the door of which is written: "Not in possession but in pursuit." We feel ourselves, therefore, at one with the noble aims toward which the nation is at present striving.

Upon the dark background of the social problem which casts its shadow into all fields—religion, ethics, economy, art—placing much in question that had always been considered not open to question,—upon this background the educational problem distinctly appears, and in its solution we all wish to assist wherever we may.

In taking this broad view of our calling, let us not be blinded to the everyday tasks of our modest little training school. I have said that there is danger that we lose ourselves in the multitude of small things, but we must not forget the other danger that our view into the broader field may make us insensible to things small and near at hand. I could almost consider the latter misfortune the worse. Where the teacher lacks the proper love and warmth to enter cheerfully into the small cares and troubles of each day, his view across the broader field will likely yield but fruitless generalities. The work in the schoolroom is and will remain the test of how much the educator must yet add to his inner treasures, first, of knowledge, but above all of clearness, depth, and warmth of moral sentiment.

Let us conceive the work of our little training school in this spirit! We are fortunate that we have it, small and modest as it is, for here we can separate the chaff from the wheat. Not that the result of the teaching determines the unit of measure. It does not. Rather the good will, the earnest efforts, the entire devotion—these things reveal how far the individual stands from the ideal. There is the field for the character-forming of the teacher who is willing to lessen the distance between himself and his ideal by unceasing efforts, by deeds rather than words. To him who is in

earnest every criticism will be welcome, for criticism challenges self-examination and frightens one to greater safety. Everyone knows how much his self-love exalts and beautifies all that he does and how difficult it is to judge one's own deeds objectively. For these reasons, then, must every help, every criticism from others be welcome. We can conceive of criticism only from the standpoint of helpfulness and as given only in aid of friends and fellow-workers. Personal motives underlying criticisms adjust themselves. Where there is life there is struggle; where there is effort, there is strife. May these things never be wanting in our midst, and may our enthusiasm for our ideals aid us in ignoring an occasional breaking of the form!

We are learners rather than learned. Let us strive to reduce the distance between the ideal and the real to the smallest possible measure, although this may be more difficult in a training school than elsewhere with its frequent changes of teachers. Let us, however, always keep in mind that old motto of the seminary: Seek the error in thyself, not in the condition nor in the children.

What we are striving after is, in short, this: That each one of us acquire a pedagogical fundamental tendency that shall pervade and fill his entire moral disposition, and, what is better, that he not only *acquire* such a tendency but *live* it; that he shun all ostentation and place truth above everything, even though it often be bitter. That is what *unites* in our circle among all the differences of birth, education, and religion. We value each other not according to what each brings, but according to what each makes out of himself in unselfish efforts, according as each for himself and in himself unceasingly strives, according as each endeavors to bring to light in his deeds that which fills and animates his soul.

Our training school is meant to be, in deed as in name, a training school for its members; a training school not only in the sense that one may here learn to change his pedagogical knowledge into current coin, but that he may put his pedagogical feeling and willing into proper tune; that he, offering up all selfish wishes and inclinations, may enter into

mutual service not only as an observer, not as a lame sympathizer, but as a zealous laborer at the tasks of our school community with a living interest.

Our mental activity, as is known, manifests itself in the three directions of thinking, feeling, and willing. To place these three processes in proper relation to each other is the duty of every man; how much more then is it the duty of the educator. To make this possible is the effort of the combined theoretical and practical endeavors of our pedagogical seminary. He who wishes to educate others ought, first of all, to educate himself.

If the educator wishes to fix in his pupils a moral-religious character whose willing possesses the proper many-sidedness, force, and richness, he must harmonize his own willing with the same fundamental principles, keeping himself under strict discipline, not only for the sake of the example, but because in no other way can he hope to keep the complicated business of educating in the right lines.

Every genuine educational activity is in itself closely related to that social sentiment which influences the individual in his own circle to work continually for the renewal of society. That is the keynote for the work of our seminary, which holds it for her honor to consider the teaching profession from the ideal side. A genuine public spirit should fill every fellow-worker and inspire in each the liveliest interest for the ideals of the seminary; making her honor the duty of each. Our pedagogical seminary is in this particular not to be compared with any other institutions in academical life, which are often satisfied if their members discharge conscientiously the duties *laid* upon them. The *intellectual* factor is not here the deciding one, but rather the spirit manifested. "With great thoughts," says Goethe, "a pure heart is bound." "Out of the heart are the issues of life," says the Bible. The life of the teacher must flow from the heart if it really amounts to anything, or if it be worth the living.

W. Rein

University of Jena

# VI

## SOME ASPECTS OF DRAWING

### I

Regarding drawing as typical of the several modes of art expression, it may be defined psychologically as the process by which one represents to the eye of another that which is immediately present to his own sense of sight, considered either objectively when viewing things external to the mind, or subjectively when concerned with pictures of the imagination. Confining our attention for the present to representation from the object, it will be necessary at the outset to agree upon what sort of data about things is possible to be obtained through sight pure and simple, since our discussion will have to do entirely with the methods of gaining and of reproducing these. Now when one declares he sees a hard object, for example, he is apt to feel that the eye of itself gives him the quality of hardness; but the truth is, to come to the point at once, that in noticing a great many times how objects which *feel* hard *look*, the eye is in time able to appropriate to itself knowledge which in the getting should really be credited elsewhere. Its remarkable ability here is not original; it is due wholly to process of association—connecting visual signs with muscular impressions. It is a commonplace fact in psychology that when various characteristics of an object have been gained through different senses, one of them being revived through any sense all the others are dragged forward with it; and while only one was gained through any special sense, all have apparently had the same origin. While this association undoubtedly becomes stronger by experience, yet it is certain that a child of five or six has most of its knowledge so firmly tied together in every direction that the sense-marks of the various elements thereof have become entirely obliterated, and

he is thus unable to discriminate between the birthplace of the simple data and that of the complex whole.[1]

The only characteristic of things the eye unaided gives us is color. The manifold other qualities of objects which we seem to get through the visual organ are suggested by variations in color; and color is to be understood to include light and shade. The eye is so marvelously keen in noting the most delicate variations in color, and it is so faithful in attending to information gained through hearing, through touch, and through the muscular sense that it soon learns to connect characteristics of color with all sorts of qualities of things. Thus even a very young child in looking at a box can tell it has three dimensions, although sight alone reveals only two.[2] He has come through many concrete experiences with solid objects to associate the quality of solidity with certain characteristics of coloring.[3] When he sees the play of colors in an apple he is able to immediately derive characteristics of taste, of form, of hardness and softness, and other facts. When he beholds a human face, the variations in color there displayed will enable him to judge whether it be kindly or otherwise, whether in jest or in earnest, whether good or evil. And the child thinks he *sees* these things directly, whereas he simply has old experiences revived from signs given by sight.[4]

[1] See the following in support of this view: Arthur B. Clark, "The child's attitude toward perspective problems," in *Studies in education*, February, 1897, p. 283; Rooper's *Drawing in primary schools*, p. 15 to 18; and an article by the writer in *Addresses and proceedings of the National Educational Association*, 1894, p. 1020–1021.

[2] Possibly the muscular data of convergence given by binocular vision may aid in the apprehension of depth in objects. See Ziehen, *Introduction to the study of physiological psychology*, p. 127. See also an article by the writer in *Education*, February, 1897, p. 371–373.

[3] A painting of a box may give one an impression of depth just as forcefully as the concrete object.

[4] Many people still believe that the eye natively gives other characteristics than color. See an article in *Education* for January, 1897, by Henry G. Schneider, p. 305; also a note in the same magazine for March, p. 439, by Dr. Briggs. For a philosophical presentation of the views set forth in the above paragraphs, see the whole of Berkeley's famous *Essay towards a new theory of vision*. For opinions by

It is important to remember here that each sense gives us special and distinct knowledge of any concrete thing. These knowledges, as of course all know, are color, taste, smell, form, etc.; and since all these readily become unified into a single knowledge-mass or concept, so that when one of them is present again in the mind the concept is revived entire, we are enabled thereby to infer form and taste and most of the other qualities of things through sight, which power is of course possessed by the other senses as well. Now in the child's contact with the realities about him he is more interested in some elements of knowledge regarding them than in others. For instance, he cares more for the taste of an apple than for its visual aspects merely; more for the gentleness and harshness of an individual than for the color-values which his face presents. He is more interested in what a horse can do than in the relation of the different parts of the horse's anatomy to each other. It may be said, in short, that the child is not natively interested in form, as it appeals to the eye, for its own sake at all; he does not care for it as he does for the taste of things and the uses to which they are capable of being put. Taste and use are qualities which are final in themselves for the child; whereas form in its visual aspect is only a means, the sign which suggests other more important characteristics.[5] Neither the child nor the adult attends to form primarily for its own sake. The result is then that, except in the case of those

artists and draughtsmen, see Ruskin, *Lectures on art*, Oxford, 1870, Lecture V., especially p. 125–128; also his *Elements of drawing*, New York, 1869, the whole of the first letter, particularly p. 22–23. See also Hamerton, *The graphic arts*, Boston, 1882, chapter on "Outline" especially, p. 64; and John La Farge, *Considerations on painting*, New York, 1896, chapters on "Suggestion and intention," and "Maia or illusions," particularly p. 57 and 169–173.

For views of modern psychologists see Ladd, *Outlines of physiological psychology*, p. 326; Scripture, *Thinking, feeling, doing*, p. 180; Titchener, *An outline of psychology*, p. 159–162: Wundt, *Human and animal psychology*, Lecture X.; John Dewey, *Psychology*, p. 165; Ziehen, *Introduction to the study of physiological psychology*, p. 103; Baldwin, *Elements of psychology*, p. 90; Halleck, *Psychology and psychic culture*, p. 37; Krohn, *Practical lessons in psychology*, p. 135.

For an agnostic or possibly contrary view of this question see James, *Psychology: briefer course*, p. 347.

[5] *Cf.* Clark, *op. cit.*, p. 287; also La Farge, *op. cit.*, p. 174–175.

individuals whose business requires them to give special heed to form, this aspect of things is obscurely comprehended by most people.

While it is true that a just appreciation of any quality of a thing depends, so far as the eye is concerned, upon a clear discrimination of its form characteristics as revealed in color values, yet, as already intimated, the average layman becomes so accustomed to using color as a servant that it never occupies any more prominent position in consciousness. One may be able to use form as a means with much readiness and accuracy without having the power to make it a distinctive object of attention. For example, one might be competent to judge as well as an artist of the taste of a certain apple, while at the same time being unable to analyze the color-complex by which he infers these qualities as the artist could. So a child might understand the meaning of a given word as well as a grammarian or philologist without being able to pick out the consonants, vowels, and diphthongs embodied; and this principle holds equally in respect of speaking, writing, and similar arts. The point to be noted here is that in reality we do not apprehend form in detail as we do most other qualities of things. We do not need to in daily life. There is rarely occasion for the average individual to give his attention to forms for their own sakes; whereas just the opposite may be said of tastes, smells, and feelings.

Now to return to our definition: Drawing is the process of portraying to the eye of another what the eye, unaided, of the draughtsman sees. In drawing an apple the draughtsman must give us data which would be the same as that which we would get if we were looking at the original; and then we can have the taste and other related experiences revived just as if the reality was before us, because we have the same signs from which to draw inferences. But it has already been said that in the case of the average layman the eye of itself gives little detailed knowledge of the forms of things—of their visual aspects; and we see here then the first great difficulty in learning to draw—the inability to see

keenly and discriminatively for purposes of representation. For purposes of inference we may indeed see well enough, but when we come to reproduce what we see we find our knowledge very deficient. Suppose the child attempts to draw an apple. He has never given special analytic attention to the color-values of that apple. He is able to infer whether it is ripe, how it would taste, and so on; but in making these inferences he has used a lot of data intuitively as it were, and when he tries to become conscious of them he finds himself much confused by the complexity of the problem. He has heretofore judged of the apple in a single act of synthesis of the varied color-qualities; but in order to represent through drawing he has to enter into a process of analysis of color-values, wherein arises his difficulty. If he is to draw a human face, the light in the eye must not suggest kindliness, anger, or any other characteristic; nor must the color in the cheek, the lines in the forehead, nor the attitude of the lips. The draughtsman must give his undivided attention simply to the variations in color before him; but up to this time he has always perceived these color-values only as a means to something else, and now it is that something else which tends to crowd into the mind when he beholds the human face.

II

It has been the aim thus far to show that in viewing objects of the external world a child gives relatively little conscious attention to their visual aspects, using sight knowledge simply as a means to reviving other associated knowledges. If we now look at the pictures of the imagination, we shall find the same true respecting them. Suppose, for purposes of study, we request a pupil to image the face of a friend. There seems to be in that image a great many qualities which he finds difficult or impossible to represent. He apparently has quite a definite picture of the face in respect of form; but if we examine his image more critically we will discover that it is really quite hazy in regard to purely visual characteristics, with some persons more incomplete

and misty than with others.[6] It may be simply a mass of color-values not at all clearly defined, or it may be seen in outline with a few distinguishing marks of character; but whatever way it will be found at any rate to be imperfect and indistinct. The reason he appears to see so much is that in his concept of the face which is engaging his attention there is in consciousness many associated experiences of kindliness, virtue, etc., as well as a few facts relating strictly to form. While it seems as if there was nothing in the mind but the visual element, there are really all these other things revived through association; and the truth is the child does not discriminate between what is necessary to be apprehended in order to represent and what is the product of inference. For a test, question him regarding the relative proportions of the different parts of the face, the exact shading of the cheeks, the eyes, the eyebrows, and so on. You will discover, if you do not already know, that he does not see these things; he has a few distinguishing marks which visually denote the face sufficiently for his needs; and then, bound up with these, is a multitude of experiences which ever tend to crowd forward and monopolize consciousness, because they have always been found in each other's company and they will not consent to be easily divorced now.

If it be true that in his contact with concrete things the child gives little explicit heed to their form qualities, we might expect that, when these things were revived in the imagination, their visual characteristics would be obscure, those elements of knowledge that were most prominent when the objects were perceived directly being also most prominent when they were imaged; and this is precisely as we find it by a study of the child's power of imagery, as well as by introspective analysis in our own cases. Our concepts of things are exceedingly indefinite so far as mere visual data are concerned. What confuses us respecting this matter is that we mistake facts of feeling, taste, and smell, and data given by the muscular sense—we mistake all these for facts

[6] For the results of special investigations along this line see Galton, *Inquiries into human faculty*, p. 83–114.

of sight alone. Suppose, for a test, we imagine a piece of red-hot iron. It makes quite a vivid impression upon us, and we think this is due wholly to the sight of it, the visual appearance merely; whereas, in reality, we are affected principally by the sensations of feeling revived through association as soon as we get a glimpse of the iron. So our sight-knowledge of it might be very indefinite with the feeling-knowledge vivid, and we would be stirred deeply, but we would have ascribed the total effect to visual impressions instead of giving the greatest credit, as we should, to the feeling elements.

Now if, when a child attempts to represent an object which he is looking at, he experiences his first difficulty in not being able to attend with sufficient power of analysis to characteristics of form, so it is apparent here that, when he sets about to reproduce his mental images, he is confronted by the same obstacle if he endeavors to show everything he knows about them, which as a matter of fact is not the case with very young children, as will be seen later. His imagination of an object may be in terms of taste and feeling rather than of sight, and so, while of course he knows a good deal about the object, he does not know much that will be of service to him in representing it. And it must be understood that there is no purpose here to maintain that when the child enters school he should have keen sight-knowledge for its own sake of the objects in his environment; for his welfare it is surely better that he be more attentive to other qualities—what things are good for, how hard and enduring they are, how they taste, etc. It is the aim to show simply that, when we wish the child to represent these things through art, he is lacking in that kind of knowledge which is essential for the purposes in view.

III

The first problem to be attacked then in the teaching of drawing relates to the pupil's difficulty of giving discriminative attention to the visual aspects of the objects of either external or internal observation. In olden times drawing

teachers went to work at this by requiring pupils to imitate flat copy at the outset. Since in flat copy the form characteristics of the dog, for example, were isolated from all his other qualities, it was believed that the pupil would himself acquire the power of isolating form when the real object was before him by imitating the copy. It is perhaps unnecessary to say that this theory has been almost wholly abandoned in our day, because it has become sufficiently evident that reproducing a copy does not aid the child much in discriminating form qualities when he has concrete objects before him. The copy is simply another form which the imagination of the pupil fills in according to his experiences. There would doubtless be some value in this process if when a pupil was looking at the dog the teacher showed him how it might be represented, thus leading him to center his attention upon form characteristics in the object before him. But this was not the method pursued. The concrete object was never before the pupil and so he did not connect his representation with it, thus making little real progress, no matter how much he continued to imitate flat copy.

More lately it has been the practice to bring the child into contact at the outset with various conventionalized forms which typify all the common forms in nature. It is the aim in the use of the type forms to make visual knowledge pre-eminent, so that when a child looks at a sphere, for example, he will tend to think of its form rather than of its taste or what it can do. This purpose has not always been kept in mind, however, for some drawing teachers lead their children to handle the sphere so as to discover that it will roll and that it feels round, thus hoping to gain the idea of roundness more completely. Such teachers evidently do not realize that when the child looks at a sphere to represent it he does not want to think that it is solid or will roll or feels round; he simply must give heed to what he *sees*, not to what he infers from what he sees, for this is one great obstacle to representation—this tendency to be always inferring and putting down what has become known from former experiences rather than what is immediately evident

to the sense of sight. But it is doubtless just to say that most of those who advocate the use of the type forms do so because they believe that in this way the child may be led to apprehend forms best, whereas, if he come into contact with natural objects at once, he is liable to be thinking of something else all the time.

It is further claimed by many that the type form being a standard or ideal, the child may get a better knowledge of natural forms by comparing them with this ideal.[7] For instance, the distinctive form of an apple may be appreciated much more readily and accurately if it be compared with a sphere than if it be studied by itself. Finally, it is sometimes urged that there is a sequence in forms, one constituting an apperceiving basis for another,[8] and the only way to observe this order in teaching is by the use of conventionalized forms.

The following question will bring our problem squarely before us here: How may the pupil be led most naturally to apprehend the visual characteristics of things that he desires to represent? We may be aided in answering this by noting how the mind acquires the ability to comprehend any of the qualities of objects. Take taste; while there are certain tastes that may be appreciated originally, still this faculty may be cultivated by experience—by directing the attention especially to taste and comparing different tastes directly with each other. By this process there is registered in the gustatory center of the brain percepts which, as they multiply, constitute an enlarging apperceiving basis for the apprehension of new tastes. Thus the tea-taster or wine-taster has registered in the appropriate center of the brain a great many tastes of a particular kind, and these enable him to discriminate new tastes of the same general nature

[7] Froebel seems to hold this view in his *Pedagogics of the kindergarten*. See the volume in the International Education Series, p. 96. For a typical modern view of this subject, see *The study of type forms and its value in education*, by John S. Clark, p. 5–13.

[8] The Kindergarten Gifts seem to be based upon the idea that there is a sequence in forms; the sphere leading to the cube, and so on. See *Pedagogics of the kindergarten*, p. 105 and 202–203.

that the average individual could not detect at all, because he has no memories in the brain to interpret them. So with feeling in judging of the quality of cloth; so with the sailor in viewing ships at a distance; so with the Indian in marking trails in the forest. These instances illustrate of course a simple law of psychology—that as the attention is turned in the direction of any special sense, and more and more impressions have become registered in the brain through that sense, greater and greater keenness of perception is acquired in that particular direction. In learning to apprehend form characteristics for purposes of drawing the same law is fully applicable. The attention must be directed to form in its visual aspects; that is, to the appreciation of variations in color. The oftener the attention is turned in this direction the more readily will it turn in the future, and the keener will be the apprehension.

But we must remember that variation in color has been taken by the child up to this time as suggestive of other more interesting qualities, so that it is especially hard to lead him to critical analysis of color-values now—much more so than it would be to lead him to analyze his feeling impressions of a thing into roughness and smoothness, for example. Remembering also that the reason for this special difficulty is because most objects are valuable to the child for some other characteristics than those of form, we see a justification for the use of the types, since, if they are properly presented, they are of little if any concern to the child except in respect of their visual aspects. Form is here isolated from other characteristics, and it is consequently more easy to direct the child's attention toward it. But while it is more difficult to isolate form characteristics in natural objects than in types, it is still not at all impossible. By appropriate questions a skillful teacher may lead the pupil's thought to the strictly visual characteristics of an object before him.[9]

[9] For a description of a most excellent way to accomplish this, see Ruskin's "First letter to a beginner" in his *Elements of drawing*, *op. cit.* Read also Burnett's *Essay on the education of the eye*, London, 1865. While Burnett sees a value in the use of types, he yet gives fine directions for cultivating the eye without their continual use.

And if she can accomplish this it must appeal to his interest with much greater attractiveness than if she confine him to the representation of conventionals; for, when he has portrayed the apple, his pictures will revive many experiences with the real object, and will give him much the same delight in beholding it as the original would. Further, when the pupil has once discriminated form in a concrete object so that he can reproduce it quite truthfully, he has made far greater progress in art expression than if he spent his time with types, since ability developed by drawing arbitrary forms cannot be wholly transferred at once to the representation of things as they are in nature. The young draughtsman may be able to portray a type form with a considerable measure of truthfulness, but at the same time he may become much confused when a real object, illustrating the type, is set before him. A simple law of psychology is involved here: that ability acquired in a certain field must be limited in its scope closely to this field, and cannot be extended into strange regions with anything like the same effectiveness.

Respecting the second argument in favor of types,—that the child can judge more accurately of any particular natural form if he has its type to compare it with,—it seems that psychology must indorse this as a principle. The peculiar form of an apple may be emphasized by showing wherein it differs from a round object. It is sound philosophy to maintain that by comparison peculiarities of individuals are emphasized. But it may be said in this connection that an orange would serve for the purpose of comparison as well as a conventional. Some might reply that an orange is not an ideal form and so must not be used. But we are not here concerned with the ideal, æsthetically considered, at all; we are simply aiming to bring out strongly the form of an apple by comparing it with a round object; or indeed we might compare it with a square object, as is the practice in the Froebelian gifts. If the type be used for the sake of convenience, it is at any rate to serve only for purposes of comparison; it is not to be studied by and for itself at all, at least in the

early years. Those who maintain that it would be a saving in the end to have the pupil spend a large amount of time in the study of types at the outset have no psychological justification for such a position. On the contrary, psychology points out clearly that such proceeding is wrong, because it tends to establish in the child's mind a habit of thinking of forms ideally rather than as they actually are. To illustrate: when the child studies a sphere as a type of roundness and then sees an apple approximating it, there is revived in his mind through association the picture of the old, that is, the ideal form, and he is not competent to judge discriminatively of the natural form appealing to vision. The principle involved is exactly the same as that illustrated in preceding paragraphs—the tendency of that which has become known of an object through former experiences to be revived when the object is present to sight, so that it is impossible to single out visual data for careful attention.[10] To seek then to establish conceptions of ideal forms before the natural forms are studied is, from the point of view of psychology, an error.

Finally, it is urged that there is a sequence in forms and that this sequence cannot be observed if we require the child to draw from nature at once. We have here just such an argument as used formerly to be advanced respecting reading—that there is a sequence in the learning of the elements of reading, the letter leading the way to the word, the word to the sentence, the sentence to the paragraph, and the paragraph to the discourse. While physically or structurally the letter is indeed more simple than the word and the word than the sentence, yet psychologically there is no such order, as recent practice in the teaching of reading has proven. It is probable that drawing teachers have confused

[10] Experiments upon children's drawings show that when they look at an object before them they make a "knowledge" drawing of it rather than a drawing of appearances. See the article by the writer in the *Proceedings of the National Educational Association*, p. 1020–1021; Lukens, "A study of children's drawings in their early years," *Pedagogical seminary*, vol. iv. No. 1, p. 10; Clark, *op. cit.*, p. 287; Rooper, *op. cit.*, p. 17–18; *Notes on children's drawings*, edited by Elmer E. Brown, p. 64; Sully, *Studies of childhood*, p. 395–396.

structural or physical simplicity with psychological simplicity, as was done at one time by teachers of reading, writing, spelling, and language. As a matter of fact, the mind does not apprehend one form through the embodiment in it of some other more simple forms. Forms are rather comprehended as a whole, as a synthesis, instead of analyzed into their component parts. The history of the method of teaching other subjects in the school curriculum furnish apt illustrations here. It used to be thought that in writing, for example, the elements of the letters should be apprehended separately to begin with. It was maintained that the mind worked analytically in breaking up a letter into its constituents rather than synthetically in grasping it as a whole, no matter what factors might be embodied in it; but this position has been well-nigh wholly abandoned in our own day.

It is probable that something may be said in favor of the doctrine that the memories left in the motor centers of the brain by drawing a sphere may be utilized in drawing all those forms which embody the characteristics of a sphere; but the converse must be equally probable, that if we draw those natural objects that embody the characteristics of a sphere among other forms, the motor ability thus gained will be of service when we come to draw a sphere. So, psychologically and pedagogically, there appears no good reason why we should not begin with the complex as well as the simple, structurally considered. Rather there are strong arguments for not analyzing forms into their elements too frequently, but they should rather be grasped as wholes, just as in writing the attention should not be centered upon elements in themselves but upon these in their synthesis—that is, upon the whole letter or whole word.

IV

It is apparent that those who claim so much for type forms in the early years of school fail oftentimes to realize that, even after a pupil has acquired great skill in this direction, he may still be unable to portray his conception of any

object which involves a number of different types having proportional and spatial relations to each other. A pupil might be able to see in the human figure, for instance, illustrations of a sphere, a cylinder, and other typical forms, and be able to represent them singly with much truthfulness; but he might at the same time find it difficult or impossible to show them in their right relations to each other in constituting the individuality or personality in question. It will be granted though, of course, that in the study of a type the pupil gains some ability in estimating spatial and proportional relationships; but the relations involved in any single type are simple indeed when compared with those embodied in a concrete object, as a plant or an animal; this being especially true when a number of plants, animals, or similar objects are brought together to portray some story or event. Now the average child never employs any of the modes of art expression for the purpose of representing type forms in themselves, but he uses them rather to give expression to his conceptions of things as they are related to each other in producing the various events and experiences of daily life. No one will deny that children are interested in the story side of life principally—that is, the happening side of life, where things come into active relationships and something occurs.[12] The child is not so much interested in representing a horse anatomically, so to speak, showing its parts, and their relations to each other, as he is in portraying it attached to a carriage or being riden by someone. In brief, his interest is not in the detailed structure of a thing which involves careful analysis of the forms of its various parts; but he is interested in that thing as a whole in relation to individuals of a still larger whole, which is the framework upon which a story may be constructed.

If we be guided at all by the child's interest, then we will not begin drawing by devoting most of the time to a representation either of type forms or of single and unrelated

[12] *Cf.* the author's article in the *Proceedings of the National Educational Association, op. cit.;* Lukens, *op. cit.*, p. 19; Earl Barnes, "A study on children's interests," in *Studies in education*, vi. p. 209.

natural forms in his environment. We must keep in mind that in drawing we wish to lead the child to acquire keenness in the appreciation of the truths of form, and especially those complex forms which are involved in most concrete objects. Keeping the child's interest in mind also, we are led to the conclusion that drawing should at first be imaginative, where the child tells an original story by bringing the various objects about him into their customary relationships; or he may give expression to a bit of literature that is read to him, or a tale that is related to him. To accomplish this he must show at least the prominent characteristics of the personnel of the story, so to speak. If these characteristics are not according to nature, as, for example, if a man's arm appears longer than his whole body, or he has six fingers, or a bear is larger than the door he is to pass through, or dogs run up trees—if any of these incongruities are found in the child's representations, it is evidence that his concepts need correcting and extending. The instructor may ask the question whether the man's arm should be longer than his whole body, and this will cause the pupil to survey his image more critically, and perhaps to examine specimens concretely, so as to observe the relative length of the arm as compared with the body. This will lead him to correct his representation; and when he attempts to portray a man again he will not be apt to make the same mistake, or at least in time he will improve. This case is typical of an almost infinite number of instances where the instructor may guide the pupil so that he will come to apprehend the forms of objects more truthfully while representing them in imaginative expression. Many persons feel there is some danger in this mode of drawing that the pupil will, through repetition, settle upon diagrammatic forms of representation, being satisfied with these in the portrayal of objects rather than striving to reproduce their actual appearances. But this tendency to arrested development is not confined to imaginative expression by any means. Unless constantly stimulated by the teacher the pupil is liable very early to fall into habits in everything he does which interfere with further progress, and

the danger is probably as great in drawing from the object as from imagination. The only safeguard against this cessation of growth in expression in drawing, as in writing or in speech, is for the instructor to prevent the making of imperfections habitual by unremitting criticism wherein shortcomings are revealed and the means of attaining to something better pointed out.

Many teachers think the only way the pupil can correct his mental pictures of things is to study them objectively. So it is argued we should begin drawing from the object at the outset, else the child will make no progress in discriminating the visual aspects of things, but a difficulty arises in view of the fact already brought out that children beginning to draw always represent what they know about an object rather than what they see when the thing is before them. In other words, children's representations are imaginative even when they are supposed to draw from the object. It is evident then that so far as correcting and extending their concepts in respect of form characteristics and relationships is concerned, we may at first have as great success, or nearly so at any rate, without as with the object being present to the senses. Perhaps at the beginning of the third school year, possibly earlier, the pupil will have become better able to give discriminating attention to the data of sense, and he is then ready for some study of the truths of form as they are revealed to sight directly. Constructive and mechanical drawing may be introduced gradually from this point, for these develop in an especial manner the power of careful scrutiny by the eye and the portrayal of what is seen, and nothing more. But the young child is not competent to separate what he sees from what he imagines, as we say, and it is contrary to nature to hold him for literal reproductions early in school life. Free rendering from the object or pictorial representation may be permitted, but only slowly should careful analytic work be required. Finally, the grammar of drawing should come after, not before, some ability in art expression has been acquired, just as the grammar of language should come after, not before, the child has learned to speak and write.

V

Thus far nothing has been said of the manual or physical aspect of drawing. In all art expression there must not only be a mental picture, but this must get itself worked out in graphic or spatial form through a physical mechanism. In olden times the technique, the mechanics of drawing, was considered the most important part of the whole subject. It was believed that the difference between the artist and layman was due principally to a difference of dexterity in arm and fingers. So courses in drawing once began (they do so still in some places [12]) with the technique side—with exercises calculated to perfect the mechanical element involved in representing. The pupil drew lines, straight, curved, and in angular relationships, from dictation as well as from copy; he made complex patterns and devices, which it was thought would include all the processes that would be employed later in the representation of natural objects.

Our recent studies in psychology have thrown some light upon the natural method of acquiring manual facility in such arts as drawing and writing. We know well enough now that there is a motor area in the brain where muscular movements leave impressions which become memories for reproducing those same movements in the future. If any given movement becomes repeated a sufficient number of times following upon any circumstance which acts as an exciting cause, then, when that circumstance is present again, the movement follows unconsciously or automatically. The exciting cause may be either a movement or an idea. The vocal mechanism in an adult, for example, is set into movement by ideas originating in the visual, auditory, or other centers of the brain. These ideas have made automatic connections with the vocal area, so that, when an idea is present, the appropriate vocal expression follows as a matter of automatism.[13] So in writing, connections may be made between the visual center and the motor area governing the

[12] See *Courses of drawing in the United States*, published by the National Bureau of Education.

[13] *Cf.* Ziehen, *op. cit.*, chapter viii.; Lukens, "Preliminary report on the learning of language," *Pedagogical seminary*, vol. iii. No. 3, p. 428–434; article on

arm and fingers, so that a certain form, as of a word, being present to vision, the motor mechanism is automatically stimulated to reproduce it. It is important to note here, by the way, that in learning language there must be a good many efforts made before the appropriate connections can be firmly established between the various centers concerned. The child cannot reproduce a sound the first time he hears it; but he must make many trials, finally hitting upon the right combination and repeating it until it is deepened into habit. So in writing, the pupil cannot at once make a copy of the forms that he sees for the first time; but he keeps trying, rejecting the imperfect reproductions until finally he settles upon a form, thus establishing an automatic process. It must be noted further that if in acquiring speech the child repeats freely a wrong pronunciation, habit sets in and he is determined to speak incorrectly in this regard until something occurs which leads him to open up and fix new connections. So in writing, if he continues to reproduce an incorrect form, development in this respect is arrested and his imperfection settles into permanent grooves.

When we consider the mechanics of drawing we have nothing essentially different, in respect of the mode of acquisition, from the mechanics of writing or of speech. There must first be visual impressions which must stimulate the motor centers. As in writing the visual impressions are at the start superior to their reproduction, so in drawing the child cannot at first make his representations exactly like his mental picture.[14] He may happen to occasionally, but he is not sure of it; just as in writing he may chance to make a good letter, but there is no certainty that the next time he tries he will make as good a one. He improves in writing by constantly working under criticism which prevents his stopping upon any low plane, thus causing arrested development.[15] So in drawing, the pupil may become able to make

" Diseases of language " in the last *Handbook of the medical sciences*, published by Wm. Wood & Co.

[14] See La Farge, *op. cit.*, p. 94–98 ; also *Notes on children's drawings*, *op cit.*, p. 67.

[15] The writer has just seen a fine article on *Studies on the physiology and psy-*

an angle of a certain size, draw a line in a certain direction or of a certain length or of a certain degree of curvature, mix paints to represent any perceived color-values, or do any of the other things required in drawing, by constantly practicing under the guidance of the teacher, who ever stimulates him to approach daily to a more truthful representation and to repeat the correct processes when he reaches them, so that they will become automatic.[16] The artist is a person who has acquired these automatic processes through the memories left by continual practicings, so that when he sees an angle of a certain size, for instance, the motor mechanism is almost if not quite automatically stimulated through habit to reproduce it accurately; just as a fluent speaker is one who has established such connections between his ideas and their vocal expression that when an idea is present the vocal movements necessary to appropriately portray it are automatically unloosed in proper order.

But how may the pupil best acquire these motor memories or images in drawing—this manual dexterity? He learns speech, a similar art, so far as the acquiring of it is concerned, by actually striving to give expression to his thoughts from the outset. Anyone who has followed a little child learning language knows that, from six months on, he is everlastingly trying to make adults understand him by the use of articulate speech as well as by facial expression and gesture. Gradually, after an infinite number of trials, he gets his ideas connected with the appropriate sounds and repeats until he makes the connections automatic; and then indeed he is master of speech. In learning to draw there is no reason why there should be an essentially different process. The pupil has thoughts which he desires to express with the brush or pencil; he has no greater skill in this direction at the start perhaps than he has in speech when he be-

*chology of the telegraphic language*, by Professor Bryan and Mr. Harter, which shows the tendency of an individual in acquiring language to stop upon a plane short of facility in the use of language. The tendency to arrested development in this way is possibly common to the learning of all subjects like language, writing, or drawing.

[16] *Cf. Notes on children's drawings*, p. 70.

gins to talk; but by repeated essays under guidance of the teacher he at last attains to good forms, which he makes a permanent part of himself by repetition. In other words, he learns to do by doing. If, on the contrary, he should give his attention for three or four years to simply acquiring manual skill he would be wasting a great deal of time and energy; because, as was said above, the child is interested in drawing not for its technique side, not as a system of markings and colorings, but as a means of conveying thought, in the same way that he is interested in language not as a body of technique, but only as a method by which he may portray his ideas and feelings to others.

Moreover, after the pupil has acquired skill in art expression by special drill he cannot put it to practical use immediately, for the reason that to draw a right angle from copy or dictation is a different thing from representing that angle when it is embodied in some concrete object. The teacher might by drill set up in the mind of the pupil an automatic process so that when he saw an angle of ninety degrees in his copy-book, or when she bade him draw an angle of these dimensions, the motor mechanism would be appropriately stimulated and the pupil would automatically perform his task; but it does not follow that when this pupil sees a right angle in a house he will reproduce it so readily, since now the angle appears so different, because of the complexity of accompanying circumstances, that it does not set off the appropriate motor processes. The only way to acquire skill in representing angles and lines in a house is by actually reproducing them from the concrete object; just as the only way to learn to write a word is by writing it, not by studying the elements of the letters. The mechanics of drawing, then, must be gained by their constant use in representing, not by formal drill before real expression is begun. The prospective bicycle rider who would spend considerable time practicing balancing on a rope, working a pedaling machine, and so on, instead of experimenting with a wheel, would be putting his time and energy to poor uses. No matter how proficient a rope walker or pedalist he became, still when he

attempted to transfer his skill in these ways to actual riding the new conditions would be such as to render what he had acquired of comparatively little value. After he had begun riding he might of course find that practice in certain movements, as in balancing or working pedals, would be of material advantage; so in drawing, it is probable that, when the pupil has endeavored to portray his thoughts, he will feel the need for special exercise in drawing lines, shading, mixing colors, and things of this sort; but such work may best be introduced only after the need for it has been felt, and when its direct bearing upon expression may be seen.

VI

In brief summary of the foregoing we have the following:

1. Drawing depends primarily upon clear apprehension of the visual aspects of objects when viewed either objectively or subjectively, and upon their proper spatial and proportional relations when they are shown in connection with one another. In drawing from the object the pupil meets his first difficulty in not being able to give careful analytic attention to the forms of things as revealed to the eye—that is, to their color-values. He has always used color-values synthetically as means to other for him more important ends, and he tends strongly to continue to do so after he enters school.

2. In representing from imagination the pupil encounters an obstacle similar to that just mentioned—his pictures lack that completeness and definiteness in respect of visual data which are essential to be clearly apprehended for purposes of representation.

3. In teaching drawing from the object we must aim at the outset to lead the pupil to perceive form, visually considered. To accomplish this his attention must be concentrated upon the visual aspects of things, and led away from the associated knowledge which tends to crowd into and monopolize consciousness. Types are useful as standards with which to compare natural forms, but they must not be studied for their own sakes in the early grades, since such

study tends to prejudice the eye of the young draughtsman if carried to great lengths. Moreover, the child is interested principally in representing natural rather than conventional forms. Again, skill gained by drill in drawing types cannot be transferred, without much loss, to representing from nature.

4. If we follow the child's interest, we will begin drawing with imaginative expression. Besides, the child draws from imagination any way even when he is supposed to draw from the object; so that the best way to teach him to see appreciatively at the outset is to lead him to study his memory pictures and correct and extend them, when necessary, by reference to the concrete objects. In this form of expression, too, spatial and proportional relations are always involved which is not so characteristic of object drawing, but which is vitally important. Care must be taken in imaginative expression, however, that the pupil does not settle upon diagrammatic forms of representation, thus causing arrested growth in this direction.

5. Perfection in the manual element in drawing in school depends upon storing in the motor area of the brain a multitude of memories of graceful, accurate, ready representations through pencil and brush of the various combinations of lines, shades, and colors embodied in portraying the appearances of those objects which the pupil will have occasion to represent later in life. This may best be accomplished by the pupil's daily striving, under constant criticism from the teacher, to approach more nearly to an ideal in grace, accuracy, and readiness while actually representing natural objects. Mere drill upon purely manual processes at the start fails of its aim for two reasons: first, it creates distaste in the mind of the pupil; and second, skill thus acquired cannot be applied to actual representation without great sacrifice. However, the pupil must not be allowed to acquire habits of slovenly or careless representation, for this leads to arrested development.

M. V. O'Shea

University of Wisconsin
Madison, Wis.

## VII

## ON TEACHING ARGUMENTATION

In classifying educative processes that threefold division which is based upon a comparison of the mind to a growing organism has seemed to me especially valuable. Corresponding to the absorption of food by the organism is the receiving of information by the mind; corresponding to digestion and assimilation is the reflective process, and corresponding to the organism's use or application of its acquired energy is the mind's action wherein it embodies the results of the knowledge gained and the thoughts reached. So we have (ignoring the inevitable overlapping) a primary division of branches of intellectual work into information-getting, as from science and history; reflection-training, as from mathematics and applied logic; and espression-making, as from language-study of all sorts. At this point there is temptation to launch into the much-mooted question of the educational values of various studies, for this classification, if we can apply the maxim *finis coronat opus*, would seem to have no uncertain bearing. Indeed, perhaps all would agree that if we take expression in its broadest sense, as including conduct as well as utterance, then expression is rightly the paramount aim in education. But as the foundation and the superstructure must support the roof, so a broad and solid information, well organized and directed by thought, must underlie expression to give it real worth or reason for being. In other words, knowledge (truths perceived in their relations), the power of reflection, and skill of adequate expression, all are necessary to the fully educated mind, "the rounded orb, divine, complete."

For the purposes of this paper, however, some discussion of the second head of the division—reflection-studies—is not only appropriate but necessary. It may well be asked

whether the subjects named above under this head (mathematics and logic) do in practice cover this important field. Does mathematical reasoning, or do even the exercises usual in the study of logic, afford the training in reflection that is actually needful in life? I think it is generally conceded that, for some cause, among the several serious delinquencies to be laid to the account of our public-school system,[1] stands prominent the inability of its graduates to think for themselves and to reason soundly. Since this great faculty is lacking we are tempted to say that it does not so much matter that they are not well-informed, not even trained in the acquiring of knowledge, for the mass of facts could not be digested; that it does not so much matter that their power of expression is so limited, until they have something that deserves to be said well. Surely the importance, then, of thought-training need not be dwelt upon. It is the only training capable of changing school puppets into men and women; the only training that makes possible the firmness and independence of judgment that lie at the foundation of all character worthy the name. Rote-teaching fails to provide this training. How to provide it is, in the writer's opinion, not so much a matter of what is taught as of how the teaching is done. Thinking—that is the faculty of inferring, and especially the kind of inferring that is of importance in life—can be taught better, probably, by a right handling of history, science, and literature than it is taught in arithmetic or even in geometry. I believe the teacher of English can do more perhaps than any other teacher to train pupils to think; not only because the critical study of literature gives unlimited opportunity for analysis, inference, and appeal to reason, but because English composition is the instrument most effective for developing reflection and making the mind work accurately. Improvement in expression goes hand in hand along with development of thought-power. The two limit each other and condition each other. In a word, they grow together.

[1] For a grave and forceful statement of which, see President Eliot's well-known article in the *Forum* for December, 1889.

Reflection is for the most part merely incidental, however, in description and in narration. It is rather more to the front in exposition; but it is the bone and sinew of argumentation.

Now it is not the purpose of this paper to discuss at length or systematically the method in which argumentative composition should be taught. That is a subject large enough for a book, and of late has in fact filled more than one book. My limited hope is only to give a few suggestions drawn from my own work in this field—work that has always been of particular interest, even pleasure, to myself; suggestions that may perhaps be of some service to other teachers.

All that has gone before has not served its purpose unless it has led to the principle that the chief aim in the teaching of argumentation must be the development of power of thought. Now the question is, how handle the subject? What is the natural order of work in this study? Shall we plunge the class at once into an attempt at a set argument, and make all matters of definition and technique incidental points to be developed from the work of the pupils; or shall we treat such topics as positive and negative propositions, kinds of proofs, refutation, invention of proofs, presumption and burden of proof, and relative strength, in a number of preliminary lessons before attempting an argumentative paper? Experience seems to point to the adoption of an intermediate method. With pupils old enough to study argumentation at all it is most satisfactory to teach first what proofs are, and how to come by them, and then how to arrange and employ them. The sooner the pupils get to writing arguments the better, of course; but time and effort are saved by first enabling them to do this somewhat intelligently, that is, with some technical understanding. It is almost needless to say that abundant illustrations, from pupils as well as teacher, should accompany this preliminary work. But all the topics above named (kinds of proof, burden, etc.) will need continual illustration for weeks, from the work of the class.

Every teacher of this subject knows that proofs are classi-

fied in at least three different ways: as *a priori* and *a posteriori*, as direct and indirect, and as deductive and inductive. The last division is of comparatively small importance in rhetoric, even with a class that has studied formal logic. But I may say in this connection that the fact that the mass of everyday arguing consists of enthymemes (syllogisms with one premise not stated, but taken for granted) is of great importance in testing the validity and also the relative strength of proofs; for it is in the assumed premise that arguments are usually most vulnerable. This is a point that no teacher of argumentation should neglect, since not only is it very important, but the mastery of it by the class does not depend upon a previous study of formal logic. It does indeed demand and therefore develop clear thinking.

As I do not propose then to discuss proofs as inductive and deductive, so I think it unnecessary to touch upon the division into *a priori* (antecedent probability) and *a posteriori* (with the usual subdivision into sign, example, and analogy). To some, however, this suggested definition of *a priori* proof may be of use: A consideration which tends to lead us to expect that the proposition in question was, is, or will be true. (It may apply then to a proposition in any tense, but its bearing is always antecedent; there can, on the other hand, be no argument from sign for a future proposition.) A word, too, concerning example. This kind of proof is strictly limited to plural (*i. e.*, particular or universal) propositions; in the case of a single proposition, such as "Washington was a sincere patriot," the proofs called in some confusing text-books examples are in fact signs. Example implies plurality, proof of a plural proposition by a single or a number of single instances.

As for the division of proofs into direct and indirect, this is so important that I wish to suggest for class-work the following classification, which contains its own explanations:

*A.* Direct proofs, proofs for one's own proposition. (These may be *a priori*, by sign, by example, or by analogy.)

*B.* Indirect proofs (of one's own proposition).

1. A direct overthrow of the opponent's proposition; that is, a proof (of any of the four sorts) against the opponent's proposition; or
2. An indirect overthrow of the opponent's proposition; that is, the refuting of a proof offered (or imagined to be offered), (*a*) in favor of the opponent's proposition, or (*b*) against one's own proposition.

Under "2" comes all refutation. It is obvious that the proofs to be refuted may themselves be either direct or indirect; that is, may be from the opponent's standpoint proofs for his own proposition, or overthrows of his opponent's proposition, directly or indirectly as under *B*. And so the subdivision might go on indefinitely, and in actual debate the indirectness is frequently carried to a confusing length. It is here that we place the lawyer's rebuttal, surrebuttal, rejoinder, and so forth. It is an excellent plan in a class debate to insist upon the students' pointing out the exact bearing on the original proposition of a given proof or refutation, though the indirectness of the bearing may lead through a labyrinth of "direct overthrow of an indirect overthrow," and so on *ad finem*. It is this very unraveling of the tortuous windings of reasoning that sharpens the wit for effective debate and persuasive marshaling of proofs.

What I have yet to say relates to the matter of handling the proposition itself. It has been my uniform experience that students may be able to collect, from their own reflection on a proposition, and from their own stock of information or from investigation, what would be a formidable array of proofs if well administered; but through a confusion in the order and application of them they lose much of their possible effectiveness. The method of dealing with a proposition, here to be described, I have called analysis, but the term is already ambiguous, as including grammatical as well as logical analysis, or determination of the exact meaning of a proposition. A better name for the process I now refer to is "proof-grouping," as will, after a brief explanation, seem obvious enough. If a student take a familiar debating-club

question, such as "The suffrage should be extended to women," and set to work collecting direct proofs of the various sorts, or indirect proofs of the first class (leaving refutations for the present out of consideration, for simplicity's sake), it will be observed, after reflection, that while his proofs may all have a bearing on his proposition, yet they bear on it in different ways, and need to be sorted and arranged. Now on what principle shall the arrangement proceed? Clearly, to group proofs as *a priori*, sign, and so forth, or as direct and indirect, ignores the real bearing of the proofs. Now the idea I am trying to explain is, to group proofs (of whatever technical sorts, though in the subgrouping the just-named technical classifications should have some weight) under two to four sub-propositions, each of which states an aspect of the main proposition, or, in other words, states a point important to prove. These few subpropositions, which will then form the main headings in the brief or outline of the argument, when taken all together should, if established, establish the main proposition or theme. Each one is therefore itself a link in the main chain of demonstration; and each one is therefore to be made strong and certain by all the subsidiary proofs available. To illustrate: A student working on the affirmative of the question already stated may offer, let us say, the following proofs,[2] among others, (*a*) Woman suffrage is in successful operation in such and such places; (*b*) Women who pay taxes are entitled to representation; (*c*) On the score of individuality each woman is entitled to a voice in public affairs; (*d*) More intimate connection with public affairs would react favorably on women's training of their children; (*e*) Testimony is offered that woman suffrage tends to elevate the tone of politics; (*f*) Women are not adequately represented at present. An examination of these proofs will show that (*d*) and (*e*) bear on the desirability of woman suffrage, (*a*) has to do with the practicability of the plan, while (*b*), (*c*), and (*f*) relate to the justice of the proposed extension of the suffrage. (The word jus-

[2] Taken from a brief published in the Harvard *Crimson*, March 16, 1896.

tice, by the way, in this and similar connections is ambiguous: it is always important to distinguish between a thing's being sanctioned by justice, and its being demanded by justice. Hence a twofold subdivision is advisable under this head.)

Now if all proofs availed of can be placed under these three heads, or if reflection can suggest no other co-ordinate points to be considered, the next step is to arrange these three heads as the main topics in the brief, in the best, that is the most natural and most effective, order. The class should discuss the wisdom of arranging thus: (*a*) Is woman suffrage demanded by justice? (*b*) Is it desirable (for the advantages or benefits of it, to women, the home, and the nation at large)? (*c*) Is it practicable (obtainable)? (*d*) Recapitulation, in inverse order.

This method of outlining in argumentation will almost necessarily lead to clear and methodical handling of a thesis. As soon as possible after a proposition has been assigned for debate these sub-propositions should be sought and stated in what may seem the best order. Then, with the table of possible kinds of proof before him, each student should set to work at the invention of his proofs under each sub-proposition. For this purpose he will exercise his powers of reflection and inference, will bring together all the information already possessed by him that bears upon the question, and will conduct whatever investigation is possible, through papers, books, magazines, and persons. In this way, with tolerable assiduity and fair opportunity, a student should accumulate a mass of proofs in each group. The next step is to arrange the proofs in each of these groups, according to strength or some other natural principle of order. Then the brief, or full outline or synopsis of his argument, is to be prepared. From this brief the discussion, whether oral or written, can be readily produced, and by the aid of the brief the discussion ought to be a systematic, thorough, and effective one.

G. J. Smith

The Mixed High School,
New York, N. Y.

# VIII

# REVIEWS

**Bible readings for schools**—Edited by NATHAN C. SCHAEFFER, Ph. D., D. D., Superintendent of Public Instruction of Pennsylvania. New York : American Book Company, 1897. 217 p. $1.00.

A biblical anthology is not a new thing. A biblical anthology, however, that gives no cause of offense to any sect, and that is specially designed to nourish the spiritual nature and promote growth in righteousness, is a novelty. Superintendent Schaeffer has made a selection from the Scriptures that may be unreservedly commended for use in the schoolroom and the home.

He has not followed the traditional order of the books of the Bible, but has arranged his selections by topics. First come narratives—those masterpieces of historical writing that have come down to us from the ancient Hebrews—which begin with the creation and end with the shipwreck and escape of Paul. Next come the Parables and the sayings and discourses of Jesus, though the name of Jesus is not mentioned. These are followed by The Law—the two Great Commandments and the Ten Commandments with related and explanatory passages—selections from the Psalms, the Proverbs, and the Prophets. The book closes with discourses on great moral topics such as "Strong Drink," "The Slothful and the Diligent," "Exhortations to Virtue," and the like. It is provided with an admirable topical index and is beautifully printed and arranged.

The time was when the Bible was the most read of books. It was read in the church, it was read in the school, it was read in the home. Now, it retains its place only in the church. In school, the reading of the Bible at opening exercises has become purely perfunctory and, from this fact, probably does quite as much harm as good. In the home, family prayers with the reading of the Bible are rarely to be

found. Without the aid of the school and the home, the church, even when supplemented by the Sunday-school, has proved unequal to the task of diffusing and sustaining a general knowledge of the book of books. The result is very general ignorance of the Bible. A professor of English in Harvard once stated to the writer that there was nothing in which he found the young men who came to that institution so deplorably ignorant as in their knowledge of Holy Writ; many of the noblest passages in Shakspere and Milton would not give up their significance to them, because they were unable to interpret them in the light of biblical knowledge. The writer's observation clearly points to the same conclusion—that the reverent, studious reading of the Bible is, in general, a thing of the past. And yet neither manual training, nor natural science, nor any other of the modern innovations, will ever supply the place of Bible study.

The causes of this general neglect of the Bible are possibly to be found in the constantly increasing demands made upon time by the high-pressure life we live—demands that leave little leisure, at least to men, for serious study of any kind; in the constantly growing conviction that there are things in the Bible which are not "milk for babes," which children ought not to read; and in the fact that state-supported schools cannot present anything to their pupils that will offend the religious views of parents. If it be granted, however, as it generally will be, that, both from a moral and from a literary point of view, the Bible is not only a worthy study, but the worthiest, it then becomes the province of a true criticism to select those portions of the Scriptures for school use which, without offense, will train the literary taste and instruct in righteousness.

Such a selection is that of Dr. Schaeffer. To know the best things in the Bible it is not necessary to do as John Ruskin did as a boy—read it time and again from cover to cover, hard names and all. The child who has studied this anthology will have studied the moral principles that should govern human affairs, will have seen them illustrated in history, embodied in the proverb, shadowed forth in the

parable, and invested by poetry with "the light that never was on sea or land." It provides a means by which the public schools may change from the perfunctory to the serious reading of the Bible.

WILLIAM H. MAXWELL

BROOKLYN, N. Y.

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**Introduction to the study of Latin inscriptions**—By JAMES C. EGBERT, Adjunct Professor of Latin in Columbia University. New York: American Book Company, 1896. 468 p. $3.50.

Although for several decades the inscriptions have occupied an important place in all advanced work in Latin, until now there has been no manual in English that could be put into the hands of the student who wished to learn how to interpret and make use of them. Professor Egbert's book, the plan of which closely follows that of the admirable French manual by Cagnat, presents in a concise and attractive form all the information needed by the novice. The introduction gives a survey of the literature of the subject, with a detailed account of the *Corpus* of Latin inscriptions which will serve as a convenient guide to this well-arranged but already unwieldy collection. The body of the work is divided into three parts, of which the first treats of the Latin alphabet, the second of names and titles, and the third of the classes and kinds of inscriptions. Part II contains a chronological list of the Roman emperors, from Augustus to Diocletian, which will be useful for constant reference, as will also the full Table of Abbreviations (after Cagnat) at the end of the volume. In Part III there is a brief but helpful discussion of the methods employed in determining the dates of inscriptions, and in restoring those that are defective. The volume contains numerous reproductions of facsimiles, drawn mainly from the works of Ritschl and of Hübner, showing the styles of writing in inscriptions of different periods. A considerable number of inscriptions are given in full by way of illustration, with explanatory notes.

Professor Egbert has done his work carefully. He has stated the facts clearly, and with a good sense of perspective. Considering the amount of detail involved, his book is, on

the whole, freer from error than most works of the kind. The following slips can easily be corrected in a second edition: P. 5, under *Notizie degli scavi*, "Rome, 1890," should be "Rome, 1876." P. 125, the title *pater patriæ* was not formally conferred upon Augustus till 752-2, though both Dion's statement of the matter and the evidence of inscriptions show that the designation was sometimes applied to him before that date. P. 257, we are sorry to see *frumentum* translated by "corn" rather than "grain." "Corn" does not convey a wrong meaning of the original to an Englishman, but to most Americans the word will suggest maize rather than wheat. On p. 50, and again on p. 386, the statements about *graffiti* are misleading; the surface on which the scratches were made was of stucco, not "cement" or "clay," and the writing was done after the wall had become dry and hard, as may be seen from the character of the lines. The sentence on p. 259, "We find references in Plautus to such *tesseræ* of *hospitium privatum*, but no known specimens are in existence to-day," will need to be modified in the light of Barnabei's interesting report in the *Notizie* for 1895, p. 88-93, which probably appeared too late for Professor Egbert to make use of it.

We should prefer to have fewer examples given for practice in interpretation, and, instead, a larger number of illustrations showing inscriptions of various types together with the monuments on which they are found. Such illustrations, giving names, phrases, or sentences *in situ* upon altars, tombs, and various objects convey a clearer idea of the use of inscriptions by the Romans than any amount of discussion. But for the younger student there is a good deal to be said in favor of Professor Egbert's plan of offering numerous typical examples, each edited in such a way as to assist in the interpretation of the class to which it belongs. The volume may cordially be recommended as a safe and convenient handbook for those interested in the subject.

FRANCIS W. KELSEY

UNIVERSITY OF MICHIGAN

**Die naturgemässe Methode des Rechnenunterrichts in der deutschen Volksschule.** I. Theil: Die psychologischen Grundlagen der naturgemässen Rechnenmethode—Von Rudolf Knilling. München: R. Oldenbourg, 1897. xii + 372 p.

It is now more than ten years since the appearance of Knilling's well-known treatise, *Zur Reform des Rechnenunterrichts in den Volksschulen* (München, 1884, 1887), a work which has had such a marked influence upon the subsequent development of the pedagogy of arithmetic. It is so rare that anything worth mentioning appears upon this subject that students will be glad to know that Herr Knilling has again taken up his pen. Especially is this true in view of the author's recognition of the two most vulnerable points in his earlier works. For it must be confessed that the *Reform des Rechnenunterrichts* was, in spite of its strength, lacking both in historical perspective and in that judicial tone which convinces without antagonizing. A dozen years have smoothed down the fiery, dogmatic, and controversial style, and has left a more pleasing and at the same time a more convincing discourse.

Furthermore, the author has abandoned his former position of dependence upon psychology alone. Even Pestalozzi, although often charged with this course, was not ignorant of the historical development of the teaching of arithmetic, nor did he fail to profit by the labors of Busse and other of his predecessors. Knilling acknowledges that his earlier work was unbalanced in that he did not recognize that, as Karl Schmidt puts it, "the science of pedagogy without the history of pedagogy is like a house without a foundation."

The work, therefore, grounds itself in equal measure upon psychology and upon the history of the pedagogy of arithmetic, and hence it cannot fail to inspire all earnest workers in this field. When we consider such recent attempts as an arithmetic in rhyme, sets of fraction-charts so colored as to drive away all notion of fractions, a "New and easy method in number," "A new method of proportion," and just at present a revival of Tillich with no mention of his name and no apparent knowledge of his failures—with these

considerations, it is refreshing to find a writer who has looked over the ground before writing.

The scheme which Knilling works out has already become familiar through his own and the contemporary writings of Tanck. Arithmetic, he asserts, is based on counting—by no means a new scheme, but never before so systematically worked out. What, he asks, do we do with numbers? And he replies, We count; that is the use of numbers, whether we count by units of one size or another, whether by single objects or groups, whether by ones or by fives, and whether forward or backward. He would not at all agree with these revivers of Tillich who try to instill Newton's definition of number into the minds of children in the first grade, nor has he any sympathy with the few Grube extremists who are left. And whether we agree with him or not, it must be admitted that he is a strong writer, that he sets one thinking, and that his books deserve a place upon the shelves of the student in the pedagogy of arithmetic.

DAVID EUGENE SMITH

MICHIGAN STATE NORMAL COLLEGE,
YPSILANTI, MICH.

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**Standard school algebra**—By GEORGE E. ATWOOD. New York: The Morse Company, 1897. 372 p. 94 cents.

As the title indicates, this book is designed for use in advanced classes of grammar schools, and, to a certain extent, in the lower classes of secondary schools. In addition to the topics usually preceding quadratic equations, the author treats merely of ratio and proportion, and concludes with the arithmetical and geometrical progressions. The scope of the book is therefore limited to rather elementary algebraic work.

Within this compass there have been gathered over five thousand examples for practice. Among these examples, in accordance with modern methods, the equation as the instrument of mathematical investigation is early introduced and abundantly used. This wealth of exercises much the more arrests one's attention owing to a very peculiar arrangement which is the distinguishing feature of the book.

The first 195 pages of the text are devoted wholly to problems topically grouped and explicitly referred to the principles governing them, while the remaining 169 pages are occupied by definitions, demonstrations, derivations of rules, and model solutions. Whether this complete physical separation of problems for practice from the necessary text possesses more advantages than the usual plan of combining the two may be open to question. At any rate, the derivations and model solutions are marked by simplicity and lucidity.

GEORGE B. GERMANN

COLUMBIA UNIVERSITY

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## NOTES ON NEW BOOKS

**Mention of books in this place does not preclude extended critical notice hereafter**

Mr William C. Collar, head-master of the Roxbury Latin School, with the aid of Mr. Clarence W. Gleason of the same institution, has prepared an easy Latin reader, *Via Latina* (Boston: Ginn & Co., 1897. P. vi, 203. 85 cents), for the use of pupils who have completed a preliminary book of forms and for whom Cæsar or Nepos is still too difficult. The matter is interesting, carefully graded, and marked by the sound scholarship and literary taste that distinguish all of Mr. Collar's work. The book ought to be a great assistance to teachers who are striving to have their pupils read, as well as translate, Latin at sight.——In *Roman life in the days of Cicero* the Rev. Alfred J. Church presents a striking picture not only of the great Roman orator, but of the social and political conditions of Rome in the closing days of the Republic (New York: The Macmillan Company. 291 p.).—— Dr. E. H. Lewis in *A first book in writing English* has prepared an introduction to the science of rhetoric and the study of style, intended for use during the first two years of the secondary school. With clearness and simplicity of exposition and considerable variety in illustration, he follows the scheme of work in rhetoric outlined some years ago by Professor Wendell of Harvard and reduced to practice by Professor George R. Carpenter of Columbia (New York: The Macmillan

Company, 1897. P. x, 293).——In a *Historical reader* Alma Holman Burton tells in rather pleasing style the story, replete with a sad romantic interest, of the Indians of New England (New York: The Morse Company, 1896. 270 p.).——In *English lyric poetry* Professor Frederic Ives Carpenter has brought together a collection of the finest English lyrics written between 1500 and 1700. He has also written an introduction on the nature and history of lyrical poetry that is an important contribution to criticism (New York: Imported by Charles Scribner's Sons, 1897. P. lxv, 276. $1.50).——The latest addition to the admirable series of school classics edited under the supervision of William C. Collar and John Tetlow is the fifth book of Xenophon's *Anabasis,* annotated by Alfred G. Rolfe. A feature of the book is the word-groups—groups of words springing from a common root. The idea is valuable, not only as an introduction to philological study but as an effective aid to the acquisition of a Greek vocabulary (Boston: Ginn & Co., 1897. P. vi, 115. 45 cents).——Clear exposition and excellent illustrations distinguish Mr. Michael J. Golden's *A laboratory course in wood-turning* (New York: Harper & Brothers, 1897. 69 p. 80 cents).——The *Students' American history,* by D. H. Montgomery, is not essentially different in plan from the author's other well-known historical text-books, though it is very much fuller in detail, particularly on political and constitutional points. It will be found valuable as a text-book not only on account of its clearness as a narrative, but on account of its abundant reference to original documents and standard authorities (Boston: Ginn & Co., 1897. 523 p.).

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## EXTRACTS FROM EDUCATIONAL REPORTS

### Secretary Melvil Dewey, University of the State of New York. Report for 1895

*Names of University institutions*—In the 1893 report I called attention to the gratifying and growing tendency to improve the nomenclature of University institutions, discussing this under the following heads:

To shorten long names.

To drop the word female from colleges and seminaries.

To make the name correspond to the real character of the institution, differentiating colleges from universities and academies from high schools.

To drop the word college or university in connection with business schools.

The spirit in which those suggestions were received, and the improvements already made, seem to justify farther discussion. The name of an educational institution has often a larger influence than would appear at first thought. An unfortunate choice of title has been as disastrous to many an association or enterprise as it has to a new publication. In many cases the name takes on its legal form without very serious consideration. Someone uses a certain phrase in speaking of the proposed institution, the phrase is copied in the press, and finally appears in the charter, without ever having been seriously studied as to its fitness or desirability.

The generic name ought to be correctly descriptive of the institution. The five distinct groups of schools—elementary, academic, college, professional and technical schools, and universities—ought not to be confused. We have cases where the word university occurs in the legal title not only of colleges, but of professional and technical schools, and in one case, at least, of an institution closed by the regents because it was below even academic grade. The name college is constantly applied to schools of medicine, pharmacy, and other professional or technical institutions which would be more properly described as " schools " with the proper word prefixed. In our usage the term high school is limited to tax-supported institutions of full academic grade, filling the gap between the elementary school and the college. The word academy is used for schools of similar grade not supported by taxation, but dependent on endowments, tuition fees, or funds from other sources. A few high schools still have the misleading name academy; usually in cases where an academy has been transferred to a high school without change of name. It is clearly desirable, in such cases, that the name should be in harmony with general usage, other-

wise confusion as to the real character of the institution arises in most minds. Elementary schools are generally divided into kindergarten, primary, and grammar.

The specific name, which corresponds to the fore-name of an individual, preferably comes before the generic name. Syracuse University is much better than University of Syracuse, for it finds its place in lists, reports, and directories under the significant name rather than under *U*. It is also shorter. The name showing the geographic location is preferable to descriptive names that might apply equally well to other institutions; *i. e.*, Syracuse University is much better than Central University, though it is located in the center of the State. In many cases the name must, however, be taken from some prominent benefactor. In that case it is highly desirable that it have the surname first; preserving the full name if desirable, as it may be in many cases, in a sub-title. Colgate University is much better than "James B. Colgate Memorial University," and if it were desirable to preserve the full name it could be readily done by putting on catalogues, inscriptions, and elsewhere, "Colgate University," and then, as a second title under it, "A memorial to James B. Colgate."

The shorter and more direct form is preferable. "The College for the Training of Teachers in the City of New York" is greatly pleased with its change to "Teachers College." The "University of the City of New York" has, by unanimous vote, asked the Regents to change its name to "New York University," and the "College of the City of New York" would make a corresponding gain by reducing its seven-word name to the simple "New York College." In the University itself the original corporate name, the Regents of the University of the State of New York, has been shortened by four words, as it stands, in the present law, University of the State of New York. Other awkward legal titles are, "Columbia College in the City of New York," which we probably shall hereafter know as "Columbia University," just as the "president and fellows of Harvard College," are seldom quoted by their formidable legal title, but as "Harvard University." A generation of magnifi-

cent work has not been sufficient to overcome wholly the prejudice against the name of Johns Hopkins University, caused wholly by prefixing the given name. On the same principle New York University would be named "165th Street New York University." The name of an institution is so constantly on the lips of officers, students, and alumni, that it is well worth most careful study to make that name compact and attractive, as well as correctly descriptive.

In the case of existing institutions, it is a much more serious matter to change, after even an awkward form has become current, but there can be no excuse for carelessly fastening on a new institution an unsatisfactory name. One result of the immense use of directories, dictionary catalogues, and alphabetical lists of all kinds, has been to get rid of the most overworked and useless word in the English language, the article *the* prefixed to names. Combining this with the longer genitive form gives "The University of Chicago," instead of the direct title, half as long, of "Chicago University," which would always be alphabetical in its proper place, while the other is not infrequently indexed in letter files, and even in printed documents, under the useless *the* or, correctly, under *University*. The name seminary by usage has been associated with divinity schools or academies for young ladies, though the better usage now ignores sex in naming institutions. The word institute, not infrequently used for academies, is coming more and more to be used for a comprehensive organization, including library, museum, and other elements of what we term home education. The most conspicuous example is the great Brooklyn Institute, but scores of such institutions with similar names are springing up in other places.

**Superintendent Edwin P. Seaver, Boston, Mass. . Report for 1896**

*Development of High Schools*—The strikingly large increase which, in recent years, has taken place in the number of high-school pupils is a phenomenon not peculiar to Boston. Throughout Massachusetts, and in all other parts of the country where public schools are well supported, the same increase has attracted attention. It is one indication of a

growing popular interest in the public high school—an interest which has been further manifested by generous appropriations of money for buildings and equipment, and by a disposition to enlarge the range and function of high-school instruction.

The public high school, in the earlier years of its history, divided the field of secondary education with the classical academy. It has now in large measure supplanted that institution. Its course of study at first embraced only those subjects which were believed to be most useful for the education of the great majority of youth who remained under instruction beyond the grammar-school age, but were not fitting for college. History, science, and modern languages received the attention which, in college-preparatory schools, was bestowed on Latin, Greek, and mathematics. There was a feeling that the modern studies afforded a better education for general purposes than was to be gained from the classical curriculum.

As the public high school grew in efficiency and in popular favor, the importance of opening ways by which its well-instructed and zealous pupils might proceed to higher institutions of learning began to be felt. To reach the scientific schools, technical schools, and even some of the law and medical schools, through the non-classical or otherwise easy examination requirements imposed by these institutions, was not a difficult undertaking. But to reach college was impossible; for the public high school was cut off from the college by a wide gap which could only be filled by classical studies.

The strictly classical course of study required for preparation to enter college was held by many to be inconsistent with the larger purpose for which the public high school existed, and which was the preparation of its pupils for active life. Nevertheless efforts were made nearly everywhere to carry on classical studies in the public high school. The so-called college class was formed. The disproportionately large demands made by this class upon the time and attention of the best teachers in the school created an opposition which led to the adoption of different expedients. In some

places separate classical and non-classical public high schools were established; in other places, where two schools could not be supported, classical studies were permitted in the single high school, but under embarrassing restrictions and hindrances. The former expedient left the gap between the non-classical high school and the college as wide as ever, and the latter bridged it but insecurely. Neither expedient has been found satisfactory.

But the matter has not rested here. There has been a change going on in the views of thoughtful people concerning the relations which should exist between the institutions of secondary and of higher education generally, and in particular between the public high school and the college. Gradually it is coming to be recognized that a course of study which is best for a youth who is to enter active life at the age of eighteen may also be the best for the same youth if he continue his education four years longer in college. Also is it recognized that this best course is not necessarily a classical course; for experience has already shown that equal degrees of intellectual readiness to take up college work can be secured by quite different courses of preparatory study.

On the part of the colleges there has been of late a manifest willingness to recognize the educative value of modern languages, physics, chemistry, and other non-classical studies which the public high school carries on efficiently and without any reference to preparation for college. The permission that has been given by some colleges to substitute one or more of the non-classical subjects for the Greek formerly required of everyone, has gone far to bridge the gap between the non-classical high school and the college. For example, it has opened a way from the English High School of this city to Harvard College; and there are boys who go that way every year. Let it not be supposed that this fact indicates any departure by the English High School from its main purpose, which is the general preparation of boys for active business life; rather does it indicate an approach by the colleges toward the non-classical high schools—an approach so near as to offer a practicable passage for such pupils as have been inspired through their studies—non-

classical though they be—with a desire to obtain a higher education.

On the part of the public high school there has been a manifest willingness in teachers and officials to enlarge and perfect facilities for college preparatory work. There has been a readiness to take advantage of every new avenue opened for admission to college, and yet no disposition to discredit or abandon the old avenues. Let there be many avenues of approach to college, and to all other institutions of higher education; and let every public high school, whatever its type, connect itself with one or more of these avenues—this appears to be the practical precept which has governed recent developments in the relations of secondary to higher education.

The improvement of the relations between the public high schools and the higher institutions of learning is not the only cause for the recent awakening of public interest which those schools have enjoyed, although it is an important one. Other causes are the increasing popular desire for an education of higher range than that afforded by the common schools; the higher standards of education now required by employers of clerks and assistants in all lines of business; the recently adopted regulation that all candidates for admission to normal schools shall be graduates of high schools, or be persons having had an equivalent education; and the requirements of the civil service examinations. But it is not my purpose to examine the operation of these causes in detail—only to mention them before passing to a more immediate consideration of the development of high schools in Boston. . .

What would most improve our present course of study in the high schools is a much larger use of options. Most of the studies now required should be made elective. From an authorized list of elective studies, the pupils should choose each year, under the advice of parents and teachers, those studies which appear best suited to their several needs. In general each pupil should be required to choose studies enough to occupy his time. Certain studies considered to be absolutely essential might be required of all pupils alike;

but such studies would occupy a relatively small part of the time. The official course of study would then be a mere inventory of the studies authorized to be pursued in the high schools, each defined as to the amount of ground to be covered, the total allowance of time therefor, and the degree of proficiency to be reached therein as a condition of the pupil's receiving a certificate. All details of arrangement in the form of time tables or programmes for weekly, monthly, or yearly use could be left to the several schools, to be worked out in the shape best suited to the circumstances of each.

The list of authorized studies would be much longer than any pupil could finish in the three or four years he spent in school. His aim would not be to finish them all or nearly all, as he does now, but taking fewer subjects to study these more thoroughly and carry them farther on. In this way his three or four years' study would result in a better education; for it would be less superficial, less fragmentary, and less scattered. Concentration, then, is one advantage, and, from the theoretical point of view, the chief advantage, which an elective course of study would have over the present course.

Another important advantage is this, that each pupil, under the advice of parents and teachers, could shape his course of instruction in the manner best suited to his personal needs. For example, the boy who wished to fit himself as well as possible for commercial pursuits could elect courses in bookkeeping, commercial law, and political economy (supposing all these to be offered), and study each of these subjects more thoroughly than the first is now studied, or can be studied so long as it forms but one fixed element in a uniform course of study. Again, the girl who was looking forward to teaching as her work in life could choose those subjects which would best promote her preparation for her approaching professional work in the normal school. She would be likely to pay much more attention to biology and physiology than would the boy with commercial inclinations; and it would be well if she could spend more time on these studies than the present course allows. Yet, again, the boy

or the girl aiming at preparation for college, or other higher institution of learning, could choose the studies which led to that end more directly and effectually than do the fixed elements of the present uniform course of study. . .

Another advantage of an elective over a uniform course of study is this, that the former holds forth the *mastery of distinct subjects of study* as the principal aim of the pupil's effort, while the latter suggests *promotion at the same time with the rest of the class* as the important thing to be accomplished. . .

Only one more advantage of the elective system of studies will be mentioned here, for I have no intention of exhausting the subject. When the emphasis is removed from the maintenance of a general average to the mastery of distinct subjects of study, the element of time in the winning of a diploma will lose much of its importance. A whole year will not be lost by the pupil who succeeds with some of his studies but fails with others to the extent of bringing his general average down below the promotion point. He will receive certificates of proficiency for the work that he has done well, and so he will be placed in arrear by only a part of a year's work. There are in every school faithful pupils of excellent spirit—pupils quite as well worth educating for their own sake and that of the community as are their more brilliant classmates—whose intellectual parts are not equal to the effort of keeping pace with the main body of the class. Such pupils oftentimes are able to do three studies well, but not four, or to do four well, but not five. These pupils should be permitted and encouraged to undertake each year only so many studies as they can do well, and to take as much longer time to earn the diploma as they may need. They should be emancipated from the tyrannical domination of the idea that loss of promotion is a total loss, or of the idea that failure to graduate with the rest of one's class at the end of the course is an irreparable misfortune, if not a humiliating disgrace. If thus permitted to work in peace of mind and with clear conscience, they would obtain a much better education than they possibly could through futile efforts to keep pace with classmates of stronger and quicker minds.

## IX

# EDITORIAL

At the opening of its twenty-third year of active work the Johns Hopkins University finds itself face to face with a most disheartening financial prospect. By the wreck of the great Baltimore and Ohio railroad property, in which the University's original endowment was invested, substantially the whole of that endowment has been rendered worthless. Securities that seemed to the founder perfectly safe for all time, would now, if thrown upon the market, have to be sold by the pound. The steps that have led up to this condition are pretty well known to students of university affairs; yet it is now too late either to criticise or to suggest. The damage has been done.

Fortunately the accumulation of surplus income during the earlier years of the life of the institution, added to some scattering gifts and the proceeds of the recent sale of a large real estate holding, have together provided a permanent fund of considerable size. The income that it yields, however, would not support even the present work of the university. For two or three years more a small guarantee fund will serve to make both ends meet; but after that, what?

To allow the Johns Hopkins University, with its splendid record of academic service and its fair share of instructive mistakes, to be crippled or closed is not to be thought of for a moment. The wealth of Baltimore and of the country will assuredly come to its rescue. Baltimore is growing rapidly in population and in resources, and its men of wealth and public spirit should see to it that the Johns Hopkins University is the speedy recipient, not of paltry thousands, but of the millions that it could use so well.

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The Library of Congress is deservedly beginning to attract national attention. The magnificent building that has

been erected for it is, of course, largely responsible for this; but, apart from the building, the conviction has gained ground that a great and well-ordered collection of books at Washington may be of the greatest use to the scholarship of the nation. President McKinley's appointment of Mr. John Russell Young to the librarianship was admirable in every way. Mr. Young is a trained and experienced executive, a man of letters by preference and by calling, and in genuine sympathy with the purposes and uses of a great library. The efficiency of the library is provided for in the appointment of Mr. Young and his competent staff of assistants; it remains now to nationalize it and to insure for it the interest and support of scholarly men and women and students everywhere. This can more easily be done, in our judgment, by establishing a Board of Regents for the library, constituted in a similar manner to the board that controls the Smithsonian Institution. Such a plan is to be urged upon Congress at its next session and, we are told, with strong hopes of success.

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The educational situation in Chicago is extremely interesting. The rapid growth of the city and its great size have developed problems very similar to those that are confronting the public schools of New York. In Chicago a very large proportion of the teaching force is studying. During the first week of September over three thousand five hundred teachers voluntarily took a week out of their vacations, and contributed money besides, to maintain and attend a series of institutes lasting for five days. At these institutes were lecturers from all parts of the country, and the attendance was large and enthusiastic at every session. To reproduce this condition in New York at present would be quite out of the question: Philadelphia or Brooklyn might do it, but New York still lacks the inspiration at the top that makes possible such personal sacrifice and such professional zeal.

Yet, in many other respects, New York has a distinct advantage over Chicago. The New York Board of Education is more representative of the best life of the community

than is the Chicago Board, despite the fact that the latter city has had in the service of its schools men like Errant, Cameron, Halle, Miller, Harper, and Adams. Mr. Errant, who has a capital article on school administration in the current issue of the *Public School Journal*, has lately been sacrificed to the politicians and schemers, and it is rumored that a similar fate will overtake the other progressive leaders next year. The politicians have more control of appointments and promotions in Chicago than has been possible in New York since the ward-trustee system was summarily thrown overboard. The superintendents, too, have no such statutory powers as those in New York and, in consequence, they are often seriously hampered and harassed by "forbidden and abhorrent" influences.

The most serious phase of the Chicago situation is due to the fact that a preposterous person named Thornton, who has pursued Colonel Parker for years with the cruel malignity that might characterize an angry snake or a wounded tiger, has become Chicago's corporation counsel. In this post he is, of course, the confidential adviser of the mayor. He is known to be using all his influence to secure a school board that will remove Colonel Parker from the principalship of the Normal School, and so gratify Thornton's long-cherished ambition. That such a man can accomplish such a purpose in such a city as Chicago seems incredible. At the mere mention of such a thing, New York ought to invite Colonel Parker and his entire faculty to open a city training school, and so secure for the Atlantic coast the primacy that Chicago would throw away.

Oddly enough, Thornton's candidate for Colonel Parker's place is Dr. Harris. This, of course, is a mere subterfuge on Thornton's part; yet he is hoist on his own petard, for Dr. Harris has lately referred to Colonel Parker, in a published article, as the ideal elementary teacher.

Chicago's schools are injured, too, by the attitude of a portion of the newspaper press. Every improvement is attacked by these penny-a-liners as a "fad," and every request for funds to carry on the schools is laughed at or opposed. The *Tribune* recently attacked the school board

and Superintendent Lane because $2,500,000 was requested in order to provide forty-one new buildings. Perhaps the *Tribune* would be surprised to know that New York, by legislation enacted in 1897, is spending $10,000,000 for elementary school sites and buildings and $2,500,000 more for four high-school sites and buildings. This is in addition to the $5,000,000 voted in 1896, and to about $10,000,000 more appropriated for similar purposes during the last three or four years. Is the *Tribune* anxious to have Chicago keep up with the procession or not? If so, it must alter its tone, support Mr. Lane and his always cautious and conservative recommendations, and help the teachers in their efforts for improvement. This would be far better policy than the mean and pettifogging flings that it makes at the superintendent and the teachers in its issue of September 5.

Under Mayor Strong the New York schools have been lifted to a new plane. Much remains to be done, of course, but the new leaven is actively working. What mayor will perform a similar service for Chicago, and so make himself famous? Mr. Harrison can do it if he will, but not by listening to Thornton. Rather let him follow President Halle of the school board, and men like him. In his recently published report, Mr. Halle prints, in italics, this splendid sentence: "No promptings of charity, no feelings of mercy, should ever have a particle of influence in keeping an inefficient person in the position of teacher." If Mayor Harrison will appoint to the school board only men who will be true to that principle, he will have made a board that will withstand any temptation to evil. It can be done, Mr. Mayor.

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The Andrews incident, on which the REVIEW commented at some length last month, is over but not closed. After much apparent vacillation President Andrews has finally withdrawn his resignation and will remain at Brown University as president.

Responding, doubtless, to the pressure of almost unanimous university opinion and to their own riper judgment, the Corporation of Brown University acted more wisely

than their talking members and advisers, and unanimously requested President Andrews to withdraw his resignation. This request was conveyed in a very frank and manly letter, which took far higher and wiser ground than that occupied by the Corporation's committee in July. Therefore the incident may be said to have ended happily and honorably.

We say that it is over but not closed, because it has stirred up a lively and useful discussion all over the country. Only university men—those who know from experience or from history what artificial limitations on the freedom of teaching involve—appear to have estimated the incident at its true value. Liberty is not license in teaching any more than in conduct, but the line is so hard to draw in concrete cases that there should be great caution on the part of outsiders in dogmatizing about it. Nor, as some critics have supposed, is there any analogy in this matter whatever between a university professor and other teachers. By the very nature of the case the university professor is supposed to be endeavoring to enlarge the scope of human knowledge. He must, therefore, be continually dealing with new and debatable questions. The principle of *Lehrfreiheit* only insists upon his right to approach these questions in a truth-seeking spirit, free from prejudices, prepossessions, and false method. To deny that, is to end universities at a single stroke.

The apparent connection of President Andrews with Mr. J. B. Walker's scheme for a cosmopolitan university was most unfortunate. Apart from the obvious and admitted advertising features of the scheme, to apply the name "university" to a plan for correspondence teaching is something that the authority of the Regents should be invoked to stop. New York State has rescued the name "college" from prostitution; let it now address itself to the protection of "university."

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A correspondent directs our attention to the fact that the following addition should be made to the list, printed in the September REVIEW, of colleges that conferred the degree of Ph. D., *causa honoris*, in June last:

**Washington and Jefferson College: Professor W. B. Langsdorf, Oxford, O.**